40 [illegible]

National Library of Canada / Bibliothèque nationale du Canada

CANADIAN THESES ON MICROFICHE / ***THÈSES CANADIENNES SUR MICROFICHE***

NAME OF AUTHOR/*NOM DE L'AUTEUR* Oluwole Dada Famure

TITLE OF THESIS/*TITRE DE LA THÈSE* AN ECONOMIC ANALYSIS OF INSTITUTIONAL BUYING PATTERNS FOR MEATS IN EDMONTON AND SURROUNDINGS

UNIVERSITY/*UNIVERSITÉ* UNIVERSITY OF ALBERTA

DEGREE FOR WHICH THESIS WAS PRESENTED/ *GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE* PH. D.

YEAR THIS DEGREE CONFERRED/*ANNÉE D'OBTENTION DE CE GRADE* 1978

NAME OF SUPERVISOR/*NOM DU DIRECTEUR DE THÈSE* M. H. Hawkins

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

DATED/*DATÉ* June 15, 1978 SIGNED/*SIGNÉ* [signature]

PERMANENT ADDRESS/*RÉSIDENCE FIXÉ* K3 ILAWE STREET, ORIN EKITI

~~WES~~ ONDO STATE, NIGERIA

NL-91 (3-74)

National Library of Canada

Cataloguing Branch
Canadian Theses Division

Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada

Direction du catalogage
Division des thèses canadiennes

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

THE UNIVERSITY OF ALBERTA

AN ECONOMIC ANALYSIS OF INSTITUTIONAL BUYING PATTERNS FOR MEATS IN EDMONTON AND SURROUNDINGS

by

© OLUWOLE DADA FAMURE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

IN

AGRICULTURAL ECONOMICS

DEPARTMENT OF RURAL ECONOMY

EDMONTON, ALBERTA

FALL 1978

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled, AN ECONOMIC ANALYSIS OF INSTITUTIONAL BUYING PATTERNS FOR MEATS IN EDMONTON AND SURROUNDINGS, submitted by OLUWOLE DADA FAMIRE in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Agricultural Economics.

Supervisor

External Examiner

Date: May 2/78

ABSTRACT

This study determines meat purchasing patterns of institutions in Edmonton and the surrounding area. It also assesses the importance of certain factors affecting institutional demand for various types of meats. The institutions considered are the hospitals and nursing homes, universities and colleges, secondary schools and day care centres, the military academy, penal institutions, welfare homes, and in-plant/in-office cafeterias.

The framework of analysis employed in investigating purchasing patterns is competitive procurement, a system whereby buyers compete with one another to secure a source of inputs or products as sellers try to secure product outlets. Results of investigations show that spot buying, tender and bid buying, and negotiated arrangements are the most commonly used methods of procuring meat. Large institutions are found to use more frequently the tender and bid and the negotiated methods, while the small institutions find advantages with the use of the spot buying method.

Merchandizing strategies in the institutional meat trade are investigated. Price and non-price strategies are found to be employed in the institutional meat trade. The small packers, however, stated that they could compete more effectively using the non-price strategies, while large packers report a frequent use of the price factor. The price factor, however, is stated by institutions as secondary to the non-price factors such as dependable service and uniform quality in selecting or retaining their suppliers.

The sources of supply and distribution channels of meats flowing into the institutions are investigated. Four large packing houses--Swift Canadian, Burns, Canada Packers, and Gainers--dominate the supply of meats to institutions. The four account for almost 75 per cent of all meats sold via the institutional outlet. Purveyors and independent wholesalers are relatively unimportant suppliers of institutional meats.

Beef, pork, and poultry are the most popular meat types in institutions, while lamb and veal are seldom used. Beef accounts for almost half (47 per cent) of the total quantity of meats used. Pork is second with 25 per cent, and poultry third with almost 21 per cent. Lamb and veal account for about 4 per cent each.

Ground beef is used in institutions more than other beef meats, accounting for almost one-third of all beef used. The type of institutions and the type of meat desired are statistically found to significantly influence the proportion of meat types bought by the surveyed institutions. Data are available from only five meat suppliers for estimation of import proportion of total meats bought by the surveyed institutions. Based on these data, about 16 per cent of beef used in institutions is estimated to originate from New Zealand and Australia. Also, these countries are found to be the main source of veal and lamb used in the surveyed institutions.

Most institutions buy the greatest proportion of their meats as fresh portioned cuts, and cook their own meals on their premises. Relatively few convenience foods are employed in institutions.

Non-price factors, such as meat quality and dependable service,

were stated by surveyed institutional meat buyers to be more frequently considered than lowest price of meat in their selection and retention of meat suppliers. Similar non-price factors, such as tastes, culture of people, and variety considerations, were stated by the same institutions to take precedence over low price in their purchases of various types of meats. However, a case study of the prices and quantities of meats bought by a major hospital between January 1974 and June 1976 inclusive showed that, in actual practice, the surveyed institutions tended to act otherwise. Lower prices of meats appeared to be important considerations in the purchase of beef, pork, and lamb by the institution. The lower the prices of these types of meats, the greater their quantities the hospital tended to buy. Institutions, therefore, may likely be responsive to prices in their purchases of these meat types, at least in the long run.

ACKNOWLEDGEMENTS

This manuscript bears the imprint of many persons, all of whom I cannot list. I would feel remiss, however, if I did not document the contributions of the following people towards the success of the study:

Professor M. H. Hawkins, my deeply understanding and considerate adviser, who guided the study and read the entire manuscript through its several drafts and offered encouragement as well as innumerable helpful suggestions. I owe him a debt of gratitude.

Professor T. A. Petersen, Chairman of the Department of Rural Economy, Dr. Michele M. Veeman, Professor of Agricultural Marketing, and Dr. B. Korda, Professor of Mathematical Economics and Econometrics, who reviewed the entire manuscript at a late stage and made many valuable criticisms. Thanks to them all.

The Alberta Department of Agriculture, who funded the research, and the many people in the institutional market who provided time and information useful for carrying out the study. To this group I am most thankful.

The academic and the administrative staff of the Department of Rural Economy provided an environment that made this study a success. To these people I am very grateful. Also special thanks to Evelyn Shapka, Departmental Librarian, for providing critical and helpful editorial assistance, and to Jim Copeland, Departmental Computer Analyst, for his untiring efforts at pinpointing statistical incongruities.

My deep admirations finally go to my wife, Ayodele, my daughter, Yetunde, and son, Olusegun, who bore in good spirits my excessive absence from them. Ayodele's never-flagging patience, good humor, and fortitude to endure the somewhat academic tension I inflicted on her deserves special appreciation. And for Yetunde's patience, although she eventually got tired of the "one remaining long book", I am very appreciative. My family, who has suffered the agony of my long separation from them, deserves my special love and attention. My obligation to them, like the national debt, never seems to get repaid. I dedicate this thesis to them.

TABLE OF CONTENTS

		Page
ABSTRACT		iv
ACKNOWLEDGEMENTS		vii
LIST OF TABLES		xiv
LIST OF FIGURES		xvii
CHAPTER		
I	THE PROBLEM AND ITS SETTING	1
	Need for Research	1
	Statement of the Problem	4
	Objectives of the Study	6
	Hypotheses	7
	Importance of the Study to Alberta	7
	Importance of Meat in the HRI Market in Canada and Alberta	9
	Scope of the Study	15
	Procedure	18
II	REVIEW OF THE RELATED LITERATURE AND ECONOMIC THEORY	21
	Introduction	21
	An Historical Review of Food Service in Institutions	22
	Previous Work Done	24
	Theoretical Aspects	32
	Some Shortcomings of the Analysis	43
	Methods of Purchasing Meat	45
	Negotiative Buying or Bargaining Method	51

CHAPTER		Page
	Theory of Bargaining or Negotiation	52
III	GENERAL METHODOLOGICAL PROCEDURE	57
	Collection Procedure	57
	The Data	60
	Limitations of Methodological Procedure	69
	Method Used for Analysis of Data	74
	Analysis of Variance (ANOVA)	74
	Specific Treatment of the Data for Each Objective	79
IV	MEAT PURCHASING METHODS AND STRATEGIES	84
	Introduction	84
	Delivery Periods	90
	Competition and Price Policy of Suppliers	92
	Strategies Used by Sellers Against Buyers and Vice Versa	95
V	SUPPLY SOURCES AND DISTRIBUTION CHANNELS FOR MEATS USED IN INSTITUTIONS	103
	Distribution Channels for Meats Flowing Into the Institutional Market	104
	Selection and Retention of Suppliers	119
	Origin of Meats Used in Institutions	122
VI	QUANTITIES, VALUES, AND PROPORTIONS OF VARIOUS TYPES OF MEATS PURCHASED BY INSTITUTIONS	128
	Major Meat Groups	128
	Institutions' Opinions on the Types of Meats Bought	144

CHAPTER

Page

Factors Related to Buying Various Types of Meats 148

Graphical Analysis of Price-Quantity Relationships 156

VII INSTITUTIONAL FOOD MANAGEMENT PRACTICES AND UTILIZATION PATTERNS OF VARIOUS MARKET FORMS OF MEATS IN DIFFERENT STAGES OF PROCESSING 162

Introduction 162

Type of Food Management Officials in Institutions Surveyed 163

Buyers' Selected Cuts 172

Summary 188

VIII SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH 190

Summary of Findings and Conclusions 190

Suggestions for Future Studies 199

BIBLIOGRAPHY 203

APPENDIX A1 QUESTIONNAIRE ON MEAT PURCHASING PATTERNS BY INSTITUTIONS 209

QUESTIONNAIRE TO SUPPLIERS OF MEATS TO INSTITUTIONS: PACKERS, PROCESSORS, PURVEYORS, DISTRIBUTORS, ETC. 216

APPENDIX A2 QUESTIONNAIRE ON MEAT PURCHASING PATTERNS BY INSTITUTIONS 222

QUESTIONNAIRE TO PACKERS, PROCESSORS, PURVEYORS, DISTRIBUTORS, ETC., WHO SUPPLY MEATS TO INSTITUTIONS 230

		Page
APPENDIX B1	NAME, TYPE, SIZE, POPULATION, AND LOCATION OF INSTITUTIONS, AND THE STATUS OF THE FOOD MANAGEMENT OFFICIALS IN THE INSTITUTIONS SURVEYED	233
APPENDIX B2	INSTITUTIONAL ESTABLISHMENTS WITH FOOD SERVICE, AVERAGE MONTHLY QUANTITY AND VALUE OF MEATS RECEIVED, 1977	238
APPENDIX B3	AVERAGE MONTHLY QUANTITIES OF MEATS PURCHASED TRANSFORMED INTO AVERAGE POUNDAGE OF MEATS SERVED PER PLATE IN A MONTH	244
APPENDIX C	THE PRODUCTION CAPACITY, GEOGRAPHIC MARKET HORIZON, OWNERSHIP STATUS, AND MEAT PRODUCTS MARKETED BY SOME SUPPLIERS OF MEATS TO INSTITUTIONS, 1977	247
APPENDIX D1	PRICING OF RETAIL CUTS OF BEEF	251
APPENDIX D2	WHOLESALE CUTS OF BEEF AND THEIR BONE STRUCTURE	252
APPENDIX D3	WHOLESALE CUTS OF VEAL AND THEIR BONE STRUCTURE	253
APPENDIX D4	WHOLESALE CUTS OF PORK AND THEIR BONE STRUCTURE	254
APPENDIX D5	WHOLESALE CUTS OF LAMB AND THEIR BONE STRUCTURE	255
APPENDIX E1	A HYPOTHETICAL TABLE OF MEAT PURCHASING METHODS USED BY INSTITUTIONS	256
APPENDIX E2	A HYPOTHETICAL TABLE OF FIRMS' RANKING OF GUIDELINES FOR ESTABLISHING PRICES	257
APPENDIX E3	HYPOTHETICAL FREQUENCY DISTRIBUTION OF THE EXTENT TO WHICH FIRMS BELIEVED THESE SALES PROMOTIONAL STRATEGIES WERE USED	258
APPENDIX E4	HYPOTHETICAL FREQUENCY DISTRIBUTION OF THE EXTENT TO WHICH FIRMS BELIEVED NEGOTIATIVE STRATEGIES WERE EMPLOYED IN NEGOTIATION	259

		Page
APPENDIX E5	HYPOTHETICAL FREQUENCY DISTRIBUTION OF THE RANKINGS OF FACTORS CONSIDERED BY INSTITUTIONS IN SECURING ADVANTAGES IN NEGOTIATION WITH SUPPLIERS AND CONSIDERED IN SELECTING AND RETAINING SUPPLIERS	260
APPENDIX E6	AN HYPOTHETICAL DISTRIBUTION CHANNEL FOR MEATS	261
APPENDIX E7	HYPOTHETICAL TABLE ON INSTITUTIONAL ESTABLISHMENTS WITH FOOD SERVICE, AVERAGE MONTHLY QUANTITY OF MEAT RECEIVED BY TYPE OF INSTITUTIONS SURVEYED, 1977	262
APPENDIX E8	HYPOTHETICAL FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF FACTORS FOR BUYING MOST FREQUENTLY BOUGHT MEAT CUTS	263
APPENDIX E9	HYPOTHETICAL RESPONSE FREQUENCIES OF INSTITUTIONS' RANKING OF FACTORS FOR USING CATERED FOOD SYSTEM	264
APPENDIX E10	HYPOTHETICAL TABLE OF FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF REASONS FOR NOT USING CONVENIENCE FOODS . . .	265
APPENDIX F1	MONTHLY PRICE-QUANTITY RELATIONSHIP FOR BEEF (AT CURRENT PRICES), JANUARY 1974 TO JUNE 1976	266
APPENDIX F2	MONTHLY PRICE-QUANTITY RELATIONSHIP FOR VEAL (AT CURRENT PRICES), JANUARY 1974 TO JUNE 1976	267
APPENDIX F3	MONTHLY PRICE-QUANTITY RELATIONSHIP FOR PORK (AT CURRENT PRICES), JANUARY 1974 TO JUNE 1976	268
APPENDIX F4	MONTHLY PRICE-QUANTITY RELATIONSHIP FOR LAMB (AT CURRENT PRICES), JANUARY 1974 TO JUNE 1976	269
APPENDIX F5	MONTHLY PRICE-QUANTITY RELATIONSHIP FOR POULTRY (AT CURRENT PRICES), JANUARY 1974 TO JUNE 1976	270
APPENDIX F6	MONTHLY QUANTITIES AND PRICES OF THE TYPES OF MEAT BOUGHT BY A HOSPITAL	271

LIST OF TABLES

TABLE		Page
1.1	Summary of Estimated Foodservice Volume, Canada, 1975	10
1.2	Estimated Cost of Raw Food Purchased, Including Non-Alcoholic Beverages, HRI, Canada, 1975	11
1.3	How the HRI Food Cost Dollar is Spent Canada, 1975	12
1.4	The HRI Estimated Receipts from All Sources for 1975	13
2.1	Nine Hypothetical Market Structure Combinations	37
3.1	Classification of Institutions by Population and Sample Sizes	63
3.2	Classification of Total Institutions Surveyed by Type and Size	64
3.3	Alberta Educational Institutions	68
3.4	General Hospitals at December 31, 1975, by Group Size	70
3.5	Alberta Auxiliary Hospitals by Group Size at December 31, 1975	71
3.6	Alberta Penal Institutions	72
4.1	Meat Purchasing Methods Used by Institutions	86
4.2	Contract Period and Number of Institutions Using Each Period	89
4.3	Meat Delivery Periods and Number of Institutions Accepting at Each Period	91
4.4	Firms' Ranking of Guidelines for Establishing Prices	93
4.5	Frequency Distribution of the Extent to Which Sellers Believed Negotiative Strategies Were Employed in Negotiation	96
4.6	Frequency Distribution of the Extent to Which Firms Believed These Sales Promotion Strategies Were Used	98

TABLE		Page
5.1	Market Shares of Firms Supplying Meats to Institutions: Estimated Quantities for a Month's Supply, as Received by 63 Institutions	105
5.2	Functional Role of Suppliers of Meats to Institutions	113
5.3	Frequency Distribution of the Rankings of Factors Stated as Considered in Selecting and Retaining Suppliers	120
6.1	Surveyed Institutional Establishments with Food Service, Average Monthly Quantity of Meat Received by Type of Institution Surveyed, 1977	129
6.2	Meat Type as a Percentage of Total Meat Used Monthly in Surveyed Institutions	130
6.3	Analysis of Variance Test Results on Types of Meats and Type of Institution	134
6.4	Institutional Establishments with Food Service, Average Monthly Value of Meat Received by Type of Institution Surveyed, 1977	136
6.5	Estimated Value of Meat Products as a Percentage of Total Value of Meat Used by Type of Institution Surveyed	137
6.6	Estimated Quantities and Percentages of Individual Meat Items Received by Selected Institutions in a Month (14 Institutions Reporting)	141
6.7	Frequency Distribution of Institutions' Ranking of Stated Reasons for Buying Beef	149
6.8	Frequency Distribution of Institutions' Ranking of Stated Reasons for Buying Veal	150
6.9	Frequency Distribution of Institutions' Ranking of Stated Reasons for Buying Pork	151
6.10	Frequency Distribution of Institutions' Ranking of Stated Reasons for Buying Poultry	152
6.11	Frequency Distribution of Institutions' Ranking of Stated Reasons for Buying Lamb	153
6.12	Results of Chi-Square Tests on Stated Reasons for Buying Various Meat Types	155

TABLE		Page
6.13	Reported Trends in the Quantities of Meats Bought Over Past Two Years, 1974-1976	159
6.14	Reported Reasons for the Reported Trends in Meat Quantity Purchases	160
7.1	Distribution of Food Service Officials in the Surveyed Institutions by Type of Institution	164
7.2	Frequency Distribution of Menu Cycle Used by the Surveyed Institutions	167
7.3	Frequency Distribution of Surveyed Institutions Serving Various Types of Meals in a Day	169
7.4	Systems of Foodservice Operation in the Surveyed Institutions	171
7.5	Number of Surveyed Institutions Buying Various Proportions of Beef Cuts	173
7.6	Number of Surveyed Institutions Buying Various Proportions of Veal Cuts	174
7.7	Number of Surveyed Institutions Buying Various Proportions of Lamb Cuts	175
7.8	Number of Surveyed Institutions Buying Various Proportions of Pork Cuts	176
7.9	Number of Surveyed Institutions Buying Various Proportions of Poultry	177
7.10	Frequency Distribution of Surveyed Institutions' Ranking of Factors for Buying Most Frequently Bought Meat Cuts	180
7.11	Frequency Distribution of Surveyed Institutions Buying Various Proportions of Market Forms of Meats	182
7.12	Frequency Distribution of Surveyed Institutions' Ranking of Reasons for Not Using Catered Food Service	185
7.13	Response Frequencies of Six Institutions' Ranking of Factors for Using Catered Food Service	187

LIST OF FIGURES

FIGURE		Page
1.1	Map of Alberta Showing the Geographic Study Area--Edmonton and Surroundings (Census District 11)	16
1.2	Institutional Market Chain	17
2.1	Model for Bilateral Monopoly with Increasing Costs	40
2.2	Static Model of Dominant Firm with Competitive Fringe Firms	44
2.3	Purchasing Methods by Institutions	46
2.4	Model for Open Bid Buying Operations	50
2.5	Model of Bargaining or Negotiation in a Merchandizing Exchange	55
3.1	A Schematic Diagram of the Classification and Extent of the Institutional Market Considered	66
5.1	Distribution Channels for Beef Reported by 5 Packers	107
5.2	Distribution Channels for Veal from Original Source to Institutions Reported by 5 Packers	108
5.3	Distribution Channels for Pork from Original Source to Institutions Reported by 5 Packers	109
5.4	Distribution Channels for Poultry Reported by 5 Packers	110
5.5	Distribution Channels for Lamb Reported by 5 Packers	111
6.1	Surveyed Institutions' Distribution of Estimated Meat Quantity by Meat Groups	133
6.2	Percentage Distribution of Estimated Value of Meat Consumed by the Surveyed Institutions	139

CHAPTER I

THE PROBLEM AND ITS SETTING

Need for Research

The lack of necessary information on meat purchasing practices in the institutional market[1] necessitated this research. Documented reports and information on institutional foodservice are disjointed, sketchy, and scattered in myriads of journals and magazines so that a coherent idea of the nature of the institutional market is not readily comprehended. Also, little descriptive information on the institutional market is published by governments, probably because of the industrial structure of the market. The market contains many institutions and supplying firms which are heterogeneous with respect to factors such as the size, function, product, and price. Thus it has not been easy to express, outline, and publish information in a general manner.

In addition to the market structure, the supplying firms are often reluctant to divulge information that could be useful for research, thus making any meaningful studies difficult to undertake

---

[1] The institutional market considered in this study comprises industrial and office cafeterias, hospitals and allied institutions, correctional homes, Department of National Defence institutions, universities and colleges, secondary schools, and special care facilities and homes. The extent of the institutional market is discussed in detail in the latter part of this chapter.

and publish. As a result, little is known about the volume and types of meat demanded by the institutions, the market channels for beef flowing into the institutions, the procurement methods, and the price mechanisms adopted in the institutional meat trade.

Besides market structure and the uncooperative nature of the institutional meat suppliers, institutional foodservice operators express conflicting opinions about the most cost-reducing type of foodservice operation to be adopted in institutions in Alberta. Most of the institutions provide foodservice through conventionally operated kitchens, which are under the institution's management, although some of them contract their food purchases and kitchen operations to food management firms. Also a wide variety of frozen and catered food products which involve minimum on-premise preparation are being used in some institutions.

The use of any foodservice system involves evaluation of the total system's operation in order to consider its effect on quality of food and service, storage space requirements, equipment layout, labour union problems, and budget for food.[1] In any case, many institutional foodservice operators think that the increasing availability of many convenience foods[2] in either fresh or frozen form and the preference of many institutions to cook meals on their own premises, in spite of the attendant cost and labour problems, have made management decision policies and procedures for food

---

[1] J. R. Ryan, "The Inconvenience of Convenience Foods," Cooking for Profit, 1969, Vol. 38, No. 220, pp. 42, 46, 48.

[2] Convenience foods are defined as prepared and frozen foods ready to be served with a minimum of preparation (such as heating, garnishing, and plating).

procurement more challenging. Without adequate information, and with policies based strictly on preconceived ideas, institutional food managers are thus believed to make decisions regarding purchasing and operational strategy according to their whims and fancies.

Research is therefore necessary to provide information with regards to the requirements of the institutional meat buyer and to relate the information to the meat packing and processing industry. The meat processing industry is concerned about how to interpret the needs of the institutional meat buyer since the institutional market for meats or any type thereof (i.e., beef, veal, pork, lamb, and poultry) is not homogeneous, but rather consists of a number of distinct sub-markets each with its own supply and demand characteristics. Also, knowledge of institutional meat buyers as to their source of supply (whether Alberta, foreign, or out of province) and the factors (price and non-price) which the institutions consider in selecting their suppliers are important in understanding the type of meats bought by institutions.

Similarly, there is a need for information to assess whether there is a need for government policy with regard to the nature of competition in the institutional market in Alberta. There is little available information, data, or published work on which to base policy decisions about the amount of foreign beef coming into the institutional market. It would therefore appear useful to research and outline the quantity and quality of foreign meats entering the institutional market.

Statement of the Problem

The problem is that little information exists about institutional meat procurement methods, untilization patterns, and flows to guide management choice in finding an economically efficient (i.e., cost-reducing) food procurement system compatible with quality provisions.

Meat in institutional foodservice is specifically selected for study because in 1975 it was reported that red meats and poultry in Canada accounted for 41 per cent of the total food-cost dollar in institutions.[1] Also, Araullo indicated that:

1. meat is that part of the menu on which a change in the food served is based;
2. meat is the major factor generating clientele acceptance or rejection of a meal; and
3. meat is responsive to advanced processing transformation.[2]

Since 1975 the steady rise in the prices of foods, especially meats, eaten away from home, coupled with the wages of labour employed in food preparation have been causing concern among Alberta institutional foodservice operators.[3] The price index of food eaten

---

[1] Foodservice and Hospitality Estimate, Canada's Hospitality Business--The Fact File (Toronto: Food Service and Hospitality Magazine, 2nd Edition, 1977), p. 15.

[2] E. V. Araullo, "Food Purchasing and Utilization Patterns in Wisconsin Hospitals : Meats, Poultry, and Fish" (Ph.D. thesis, Department of Agricultural Economics, University of Wisconsin, 1971).

[3] For an observation on how the price of food eaten away from home has been rising relative to food eaten in the home and other consumer items since 1975, see (a) Statistics Canada, Consumer Prices and Price Indexes, Cat. No. 62-010, Quarterly, and (b) Statistics Canada, Consumer Price Index, Cat. No. 62-001, Monthly.

away from home increased by 11.6 per cent between January 1975 and April 1976, while that of food for home consumption rose by only 0.9 per cent during the same period. Some institutional meat buyers thus expressed the impact of the price rise by indicating that the rise in meat prices has made purchasing and costing an almost daily task for them since they have to keep their expenses within budgets.

Thus, commenting on the problem of meat cost, the food director of a nursing home in Fort Saskatchewan said: "Price is always the question; we have no problems in obtaining the meat and produce we require. There are spot exceptions, of course. But it has become increasingly difficult, and sometimes impossible, to adequately plan a budget for a following year. For any institution on a fairly inflexible cycle menu, this is a real problem."[1]

An annual report of the Alberta Hospital Services Commission recorded that raw food cost was second highest (exceeded only by wages and salaries) of all hospital operating and administrative costs.[2] The same report indicated that, in 1973, the total cost of food consumed by institutions in the province was estimated at $76.9 million.[3]

Thus an understanding of the various ways in which meats are procured in the institutional market could be useful for the food operators who need information on cost-reducing purchasing strategies.

---

[1] Personal conversation, Rosecrest Nursing Home, Fort Saskatchewan, Alberta, Summer 1977.

[2] W. W. Lowrie, "Preliminary Report on the Proposed Alberta Food Corporation" (Unpublished Report, Edmonton, Alberta Agriculture, Statistics Branch, 1976), p. 1. (Figure based on 1968 Annual Report of the Alberta Hospitalization Benefit Plan.)

[3] Ibid., p. 28 (based on food service records).

Objectives of the Study

The objectives of the study are designed to answer the following questions:

1. What meat purchasing methods are used by institutions?
2. What are the types and cuts of meats that are most popular with institutions?
3. Where do institutions buy their meats, especially beef, and why do they choose that source of supply?
4. What systems of foodservice operations (i.e., conventionally operated kitchens, or the catering system) are used in institutions and why?

From the answers to these questions, the study seeks, in general, to determine the purchasing patterns of institutions and to assess the importance of certain factors affecting institutional demand for various types of meats. However, more specific objectives of the study are:

1. To describe meat buying strategies employed by institutional meat buyers in negotiating with suppliers in terms of price and non-price policies.
2. To develop and interpret information on the supply sources and the extent of flows of meats to institutions and the economic characteristics (such as size and market share) of the establishments which supply the meats.
3. To determine the type, quantity and the value of meats used by institutional foodservice operators.
4. To identify and evaluate utilization patterns and interpret

factors affecting procurement and use of various market forms of meats like fresh meats, pre-cooked frozen foods for reconstitution, and hot (convenience) foods.

Hypotheses

To achieve the preceding objectives, hypotheses which affect institutional buying characteristics are postulated. The hypotheses are outlined as follows. It is hypothesized that:

1. There is no relationship between the size of an institution and the procurement method used for meat purchases. The hypothesis is intended to show whether there is any correlation between different sizes of institutions and the use of the tender and bid, the negotiative buying, and the spot buying methods.
2. Most meat or menu items consumed by institutions originated from foreign sources.
3. The type of institution or the type of meat does not influence the quantity of any meat type bought by each institution.
4. The most important factor considered by institutions in buying most frequently bought meat cuts is the price of the cut.

Importance of the Study to Alberta

An earlier research indicated that about 25 per cent of total sales of cattlemen and processors in Alberta were obtained via hotel,

restaurant, and institutional (HRI) foodservice operations.[1] The Canadian Restaurant Association also indicated that the HRI trade accounted for 30 per cent of the beef consumed in Canada in 1976 and the share was expected to rise to 50 per cent by 1980.[2] One might therefore expect that as the number of meals consumed in the HRI market increases, the quantity of meats consumed in the HRI market will also increase. Alberta, being a major producer of beef, pork, and poultry, could expect to reap considerable benefits if the Alberta HRI market were to buy more of Alberta produced goods. Since most of the institutions have a close tie to the province through subsidies and total jurisdiction, it seems only natural to expect that these Alberta institutions will buy Alberta produced meats as trade in the institutional market grows.

A discussion of imported beef is also relevant within the scope of this study because the Canadian government appears to believe that the high levels of beef that have entered this country have created market instability and depressed prices for beef farmers.[3] This is indicated by the imposition of import restrictions on beef from Australia and New Zealand. Also, an earlier research has suggested that imports from Australia and New Zealand go primarily into processed meats (hamburger patties and sausages) which are heavily used by the

---

[1] K. D. Smith, R. T. Berg, M. H. Hawkins, M. E. Stiles, and S. C. McFadyen, The New Beef Grades (Edmonton: Rural Economy Bulletin, Applied Research, The University of Alberta, 1975), p. 65.

[2] H. Dodd, "Canada Gains in HRI Trade," Cattlemen--The Beef Magazine, March, 1976, p. 10.

[3] See Toronto Globe and Mail, Thursday, October 14, 1976, p. B5.

HRI industry.[1] It would therefore appear timely to document and describe the entrance and the quantity of imported meats flowing into the institutional segment of the HRI market in Alberta.

Importance of Meat in the HRI Market in Canada and Alberta

In 1975, the retail value of food and nonalcoholic beverages moving through the market for food served away from home in Canada was estimated as approximately $4.2 billion (Table 1.1). An important component of this estimate was the cost of raw food purchased which was estimated as approximately $1.7 billion (Table 1.2). Institutions[2] alone accounted for $647,285,000 or 39.5 per cent of this, while red meat and poultry ranked high as a major food item accounting for 41 per cent of the total HRI food cost (Table 1.3).

The importance of the foodservice industry in Canada becomes more apparent when the estimated value of its products and services and its linkage effects with other industries are considered. In 1975, Canada's food-away-from-home industry made sales estimated at $6.1 billion and employed 384,000 people directly in the accommodation and foodservice groups (Table 1.4), while an estimate of 484,000 is forecast for 1982.[3]

---

[1] K. D. Smith, op. cit.

[2] Institutions' food costs considered here are those of caterers, industrial restaurants, hospitals and allied institutions, correctional institutions, Department of Defence institutions, universities, colleges, and schools.

[3] Department of Manpower and Immigration, Canadian Occupational Forecasting Program, No. 1 : Canada (excluding occupations generally requiring post-secondary education) (Ottawa: 1975).

TABLE 1.1

SUMMARY OF ESTIMATED FOODSERVICE VOLUME, CANADA, 1975

Accommodations group, sale of meals	$454,900,000
Sales of food and beverages through vending	122,014,000
Sales of sandwiches, prepared foods, catering by bakeries	1,426,000
Restaurant sales, adjusted for indicated 7% underestimate	2,119,135,000
Department store sales of meals and lunches	134,953,000
Cost of foodservice of airlines	49,034,000
Cost of foodservice for railways	22,379,000
Secondary school, college, university foodservice receipts	367,949,000
Motion picture and drive-in theatres revenues from sales of candy, drinks, etc.	39,363,000
Private clubs, estimated food sales	35,175,000
Meal and lunch sales by amusement and recreation group, other business and personal services	96,897,000
Caterers, estimated receipts	218,175,000
Industrial restaurants, estimated receipts	275,618,000
Total commercial receipts	3,937,018,000
Add: Cost of raw food bought by hospitals	129,082,000
Cost of raw food bought by special care facilities	100,419,000
Cost of raw food bought for correctional institutions, not including county jails	15,938,000
Department of National Defence cost of food and labor	70,000,000
Total	4,252,457,000
Add: Adjustment to convert hospital, correctional institutions, foodservice to retail equivalent	114,512,000
Total, adjusted to retail equivalent as noted above	4,366,969,000
Less: Adjustment to eliminate duplication for catered service in schools, colleges, airlines	145,944,000
Total as adjusted	$4,221,025,000

Source: Foodservice and Hospitality Estimate, Canada's Hospitality Business--The Fact File (Toronto: Food Service and Hospitality Magazine, 2nd Edition, 1977), p. 13.

TABLE 1.2

ESTIMATED COST OF RAW FOOD PURCHASED, INCLUDING NON-ALCOHOLIC BEVERAGES, HRI, CANADA, 1975

	1975
Restaurants[1]	$644,217,000
Accommodations group	180,423,000
Vending sales of foods and beverages	48,805,000
Department store sales of meals and lunches	52,092,000
Foodservice for scheduled airlines[2]	7,551,000
Railway foodservice	8,952,000
Motion picture and drive-in theatres	11,022,000
Private clubs	14,422,000
Amusement, recreation, business and personal services	38,759,000
Caterers	84,216,000
Industrial restaurants	137,809,000
Hospitals, allied institutions, special care facilities	229,501,000
Correctional institutions, federal and provincial	15,938,000
Department of National Defence	40,000,000
Universities and colleges, secondary schools[2]	139,821,000
Total cost of raw food purchased by above groups	$1,653,828,000

[1] After adjustment to eliminate sales of alcoholic beverages from total restaurant receipts.

[2] After adjustment to eliminate duplication resulting from catered services.

Source: Foodservice and Hospitality Estimate, Canada's Hospitality Business--The Fact File (Toronto: Food Service and Hospitality Magazine, 2nd Edition, 1977), p. 14.

TABLE 1.3

HOW THE HRI FOOD COST DOLLAR IS SPENT

CANADA, 1975

Product	%	$
Meat	35	578,840,000
Poultry	6	99,230,000
Eggs	2	33,077,000
Fish and seafoods	3	49,615,000
Vegetables, fresh, frozen, or canned	9	148,845,000
Fruits, fresh, frozen, or canned, jams and jellies	3	49,614,000
Dairy products--milk, butter, cheese, ice cream	14	231,536,000
Bakery products, including bread and rolls	6	99,230,000
Beverages--coffee, tea, hot chocolate	5	82,691,000
Juices, ades, drinks, including carbonated	2	33,007,000
Shortening and cooking oils	2	33,076,000
Sugar, syrups, confections	6	99,230,000
Spices, seasonings, condiments, sauces	2	33,077,000
Dessert products, miscellaneous processed foods	2	33,976,000
Flour and mill products, pasta, cereals, rice	3	49,614,000
Totals	100	$1,653,828,000

Source: Foodservice and Hospitality Estimate, Canada's Hospitality Business--The Fact File (Toronto: Food Service and Hospitality Magazine, 2nd Edition, 1977), p. 15.

TABLE 1.4

THE HRI ESTIMATED RECEIPTS FROM ALL SOURCES

FOR 1975

Foodservice volume, all types of service		$4,221,025,000
Add: Accommodations group:		
Receipts from rooms		842,000,000
Receipts from sale of beer, wine, liquor		770,200,000
Receipts from merchandise and other sources		171,400,000
Estimated private club receipts from sale of liquors		24,231,000
Total receipts, all sources		$6,028,856,000
Employment in Accommodation and Foodservice Group, 1974		384,000
Weekly wage bill at 1975 rates		$38,330,000
Annual wage bill at 1975 rates		$1,993,200,000
Travel spending in Canada, by Canadians and visitors from other countries		$8,500,000,000
All industry share total personal expenditures on goods and services		6.3%
Foodservice share of total spent on food and non-alcoholic beverages		27.7%
Total Foodservice Outlets:		
Eating places, all types	31,800	
Hospitals, all types including special care	4,742	
Accommodations group	17,800	
Private clubs	3,400	
Grand total, all foodservice outlets, 1974-5	57,742	
Meals served, restaurants, hotels and motels	$1,144,000,000 annually	

Source: Foodservice and Hospitality Estimate, Canada's Hospitality Business--The Fact File (Toronto: Food Service and Hospitality Magazine, 2nd Edition, 1977), p. 12.

In the same year, construction expenditures on hospitals, sanatoria, clinics, and similar institutions reached a record level of $464 million, with Alberta sharing $30,694,000. The 1975 total for Alberta was an 11 per cent increase over 1974.[1]

In 1974 in Alberta about 25 per cent of total sales of cattlemen and processors derived from hotel, restaurant and institution (HRI) foodservice operations.[2] In the same year, out of a total value of $529,889,000 recorded for the service trade in Alberta, accommodation and food services accounted for 83 per cent or $439,807,870[3] and the City of Edmonton accounted for approximately one-third (32 per cent or $169,564,480) of the 1974 value of the food services.[4]

In 1975, 50 leading companies in foodservice reported total sales of $1,593 million. These sales rose to $1,878 million in 1976, a revenue gain of $285 million or 17.9 per cent in one year.[5] This would represent a value of sales of $769,980,000 for meats and poultry.

Thus, considering the above facts, it can be said that with the growth potential of the foodservice industry in Alberta or Canada, Alberta stands to gain if more Alberta produced meat sells in the

---

[1] Statistics Canada, Construction in Canada, Cat. No. 64-201, Annual.

[2] K. D. Smith, op. cit., p. 65.

[3] Alberta Agriculture, Agricultural Processing and Manufacturing Guide (Edmonton: 1977), p. 10.

[4] Ibid., p. 11.

[5] Foodservice and Hospitality Estimate, op. cit., p. 13. It should be noted that no account of value due to inflation and how much to volume increases were provided. Thus the recorded revenue gain of $285 million could connote a wrong picture.

institutional market.

Scope of the Study

The limit or scope of this study can be viewed in three dimensions: (1) the geographical extent of the study; (2) the institutional establishments that buy meats; and (3) the functional relationships of the buyers and sellers in the institutional market.

Geographical Extent

The outer limit of this study is Alberta. However, the major criterion for including an institution or a firm in the study is that it ultimately serves the institutional market in Edmonton and the surrounding area—Census District 11 (Figure 1.1). Given this criterion of demarcation, attention is directed solely to institutions and firms located in the Census District. Implications developed from this study will apply to the institutions in Edmonton as well as those in the District. Edmonton is the largest city in the study area and it is centrally located.

Functional Relationship of Participants

Normally, a conceptual view of the institutional market chain consists of two functions which involve three parties. Diagrammatically it can be seen in Figure 1.2.

This study focuses on the wholesale market. Since in some cases the primary functions have been eliminated, the study analyses procurement relations between packers and institutions; otherwise it studies procurement relations between processor, purveyor or

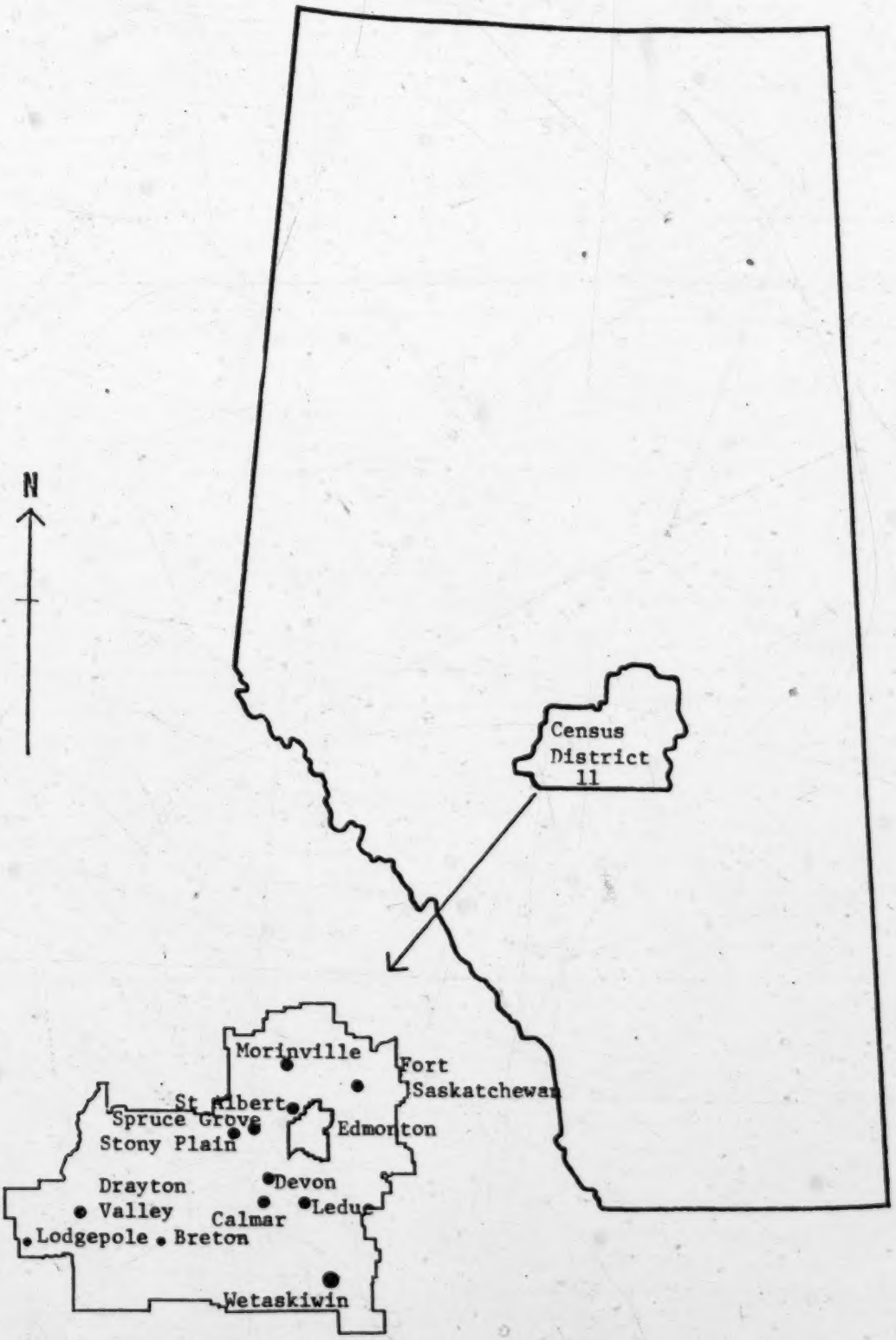


FIGURE 1.1: Map of Alberta showing the Geographic Study Area--Edmonton and Surroundings (Census District 11).

distributor, and institutions.

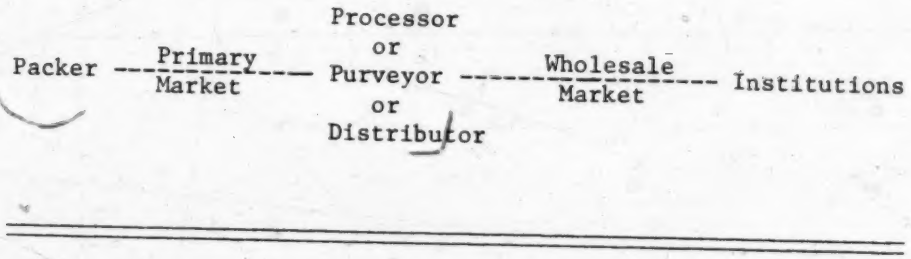


FIGURE 1.2: Institutional Market Chain

Institutional Establishments

As a unit, the aforementioned institutions are the centre of analysis. The institutional or captive establishments comprise such units as schools, colleges and universities, penal institutions, hospitals, homes for adults and children, etc. These captive establishments are viewed as rendering a service for the public rather than operating for a profit, although some may generate a profit. Food service in institutional establishments is usually supportive, in the sense that the establishments are subsidized by governments. However, a few kinds of businesses such as fraternal associations, office cafeterias, and publicly owned nursing homes could be classified in either direction.

This study is concerned solely with the captive establishments, and does not deal with the hotel and restaurant segment of the HRI

market. The institutional establishments have the following things in common:

1. They prepare and serve food to the public, though the public served are in some cases termed inmates or patients.
2. They provide food service at tables or counters in rooms for on-premise or immediate consumption.
3. They have their own food preparation area and a record of food received. Thus they have common problems in housekeeping and maintaining the premises they occupy.
4. Some provide sleeping accommodation and other services to the public, plus offer meeting rooms needed for conferences, gatherings, and social functions of all kinds.
5. They use much of the same equipment, almost all of it specially designed for the job, such as kitchen equipment, beds and bedding, and many other items.

Procedure

In Chapter II of the thesis a review of literature dealing with meat procurement in institutions is presented. Presented also are the economic theories relevant to analyzing some of the meat purchasing methods used in the institutional market. The chapter focuses on economic models which tend to depict the reaction of buyers and sellers when the spot buying method, the bid buying method, and the bargaining method of purchasing are used.

In Chapter III the general procedures used in obtaining information for the study are presented. These include the systems of

data and information gathering, the determination of relevant facts, the statistical methods used for treatment of data, and the limitations of the methodological procedure.

Meat procurement methods used by institutions are analyzed in Chapter IV. Essentially the extent to which informal or spot (salesmen) buying, semi-formal (negotiation or bargaining) buying, and formal (tender and bid) buying are used were investigated. Also, attention is directed to investigating the tactics used by institutional buyers and their meat suppliers to secure advantages in a merchandizing exchange in terms of price and non-price strategies.

The supply sources of the meats used in institutions and the functional (who-deals-with-whom) organizations of the market channel are analyzed in Chapter V. Import proportions of various meats consumed in institutions are determined, and the economic characteristics of the firms that supply meats to the institutions are described.

The types of meats demanded by institutions are analyzed in Chapter VI. The total quantity and value of meats used by all institutions and each type of institution surveyed are shown. Also shown are the quantities and proportions of major meat items used by institutions. The chapter ends by presenting institutions' opinions and comments on the various types of meats purchased.

Information presented in Chapter VII relates to the foodservice operations and utilization pattern of meats in institutions, viz., the foodservice systems used especially with regards to institutional catering, and the use of conventional kitchens. Other characteristics of the institutional food service considered are menu cycles, types of meals served, and the use of various forms of meats--hot convenience

foods or pre-cooked frozen forms of meats. The various cuts of meats bought by the institutions and the extent to which institutions use the services of food management companies are also analyzed.

The major findings of the thesis are summarized in Chapter VIII. The conclusions, as conceived from the findings, are also presented in the chapter.

CHAPTER II

REVIEW OF THE RELATED LITERATURE AND ECONOMIC THEORY

Introduction

Published research on the economics of food purchasing and utilization patterns in institutions is scanty, and publications were not available until the mid-1950's. In addition, most of the publications are in the form of narrative reports rather than economic analysis. The studies, however, do provide data on which to base predictions of potential markets for food in different types of food operations.[1] Also the principles and methodology which thus far have been developed provide tools for market analysis.

The contents of this chapter consist of two major expositions. The first reviews previous studies on market research on food systems operations in institutions. The purpose of the section is to provide some guidelines for developing this research. It is also intended to enhance an understanding of the problem and the objectives of this study and of the implications of the various methods of meat procurement in institutions.

This literature review starts with a brief review of the

---

[1] For example see Canada's Hospitality Business--The Fact File (Toronto: Foodservice and Hospitality, 2nd Edition, 1977), and "Menu Census," Institutions/Volume Feeding Magazine, Vol. 68, April 15, 1971, pp. 39-61.

development of food service in institutions. This is followed by reports on previous studies done on institutional food service on the basis of meat procurement practices and methods, utilization pattern of meats in either the conventional[1] or the pre-cooked form, food systems operations, and general studies on the institutional use of meats.

The second part of the chapter examines the theoretical contributions that economics has made towards conducting an inquiry into institutions' buying behaviour. The framework within which the theoretical discussion proceeds is the Bainsian market analysis. The section outlines pattern of conduct and industry structure, discusses the theories of bilaterial oligopoly under various assumptions, and ends by discussing the most commonly used method of purchasing meats in the institutional market.

An Historical Review of Food Service in Institutions

Eating in large numbers in public places has been a widely practised style of dining since earliest times. Danish tribes were reported dining together in large groups before 10,000 B.C.[2] The Bible also gives many accounts of a mass feeding industry. For instance, accounts tell of Xerxes giving a banquet that lasted 180 days, and of

---

[1] Conventionally prepared meals are those that have all, or essentially all, of the entrees prepared in the institution's kitchen. Meals that combine frozen vegetables and desserts with raw meats are considered to be conventional.

[2] L. H. Kotschevar, Management by Menu (Chicago, Ill.: National Institute for the Food Service Industry, 1975), p. 4.

Solomon butchering 22,000 oxen for a public feast.[1]

In medieval times, institutional food service was widely practised in monasteries, colleges, and royal households on the Continent and in England. The royal household, with its hundreds of retainers, and the households of the nobles, which often numbered as many as 150 to 250 persons, necessitated food service on an institutional basis. Foods were provided using cheap labour working on the lands of the lord of the manor and the endowed lands of the monasteries. Thus, costs of foods and labour services were of little or no importance in medieval institutional feeding operations. There were no purchase problems, cost problems, or storage problems. There also were no dieticians, but the cooks were perhaps somewhat trained as evidenced by the high standard of food served in the inns.[2]

About 1600 A.D., however, the first coffee houses (cafés) appeared in Europe, specifically in England, France, Germany, Norway, and Sweden. These countries' institutional food service practices have contributed largely to the modern day western institutional food service.[3]

Today, following the habits and trends developed in Europe, residence halls with dining rooms, college cafeterias, hospital feeding, etc., are common in Canadian society. Not only is the system of food procurement and service more advanced and complex now than in medieval Europe, but the use of trained personnel (the dieticians and cooks)

---

[1] Ibid.

[2] B. B. West, L. Wood, V. F. Harger, Food Service in Institutions (New York: John Wiley and Sons, Inc., 4th Edition, 1965), p. 4.

[3] Ibid. (1st Edition, 1938), p. 3.

has become an indispensable factor in modern day institutional feeding operations. The organization and administration of any of the food services in today's complex economic order cannot be trusted to untrained persons. Knowledge of the common foods and their preparation and cost, of the problems of the organization and administration of institutional food units, and of the basis for purchasing food and choosing equipment are essential to the person charged with the responsibility for an institutional food service.

Previous Work Done

Food Procurement Practices and Methods

In 1955, Hoofnagle, et al. made an analysis of market potential for food in charitable, mental, and penal institutions in the northeastern and southeastern United States.[1] In the study they revealed that factors such as type of institution and regional location tend to determine the market for certain types of foods. Also, size of operation and type of ownership tend to determine food procurement practices and methods. Penal institutions tend to demand a high volume of food at a time, small non-government institutions buy food daily in small quantities, while government institutions use either competitive bid buying or contract negotiations.

A survey of buying practices and food use in in-plant cafeterias

---

[1] W. Hoofnagle, P. Dwoskin, and J. Bayton, The Market for Food in Selected Public and Private Institutions, Marketing Research Report No. 84 (Washington, D.C.: U.S. Department of Agriculture, 1955).

was conducted in 1959 by Lifquist.[1] The survey showed that foods were bought on a daily basis as needed. Large cafeterias bought food from wholesale distributors while smaller operators bought from retailers. Most meats were bought fresh and in retail cuts.

In 1960, Anderson, et al. conducted a study among elementary and high schools.[2] Of the total amount of meats bought by these institutions in a year, they found that about 60 per cent was beef and 16 per cent was poultry. The study also showed that government participation in school food programs was relatively small and that the schools transacted most often with local food dealers. A more recent study by the Cornel Hotel and Restaurant Administration, however, showed that in 1973 some 51.2 million children in schools in United States participated in a federally funded Food Service Program amounting to about $34.8 million.[3]

To investigate conflicting reports with regards to the factors influencing the use of certain food forms in different stages of processing in institutional market, Araullo (1971) analyzed the factors affecting procurement and use of various market forms of meats in Wisconsin hospital food operations.[4] The study also developed a management information feedback model to provide a framework for

---

[1] R. C. Lifquist, Buying Practices of Food Use of Employee Food Service in Manufacturing Plants, Marketing Research Report No. 321 (Washington, D.C.: U.S. Department of Agriculture, 1959).

[2] K. Anderson and W. Hoofnagle, The Market for Food in Public Schools, Research Report No. 377 (Washington, D.C.: U.S. Department of Agriculture, 1960).

[3] "Food Service in 1985," The Cornel Hotel and Restaurant Administration Quarterly, Vol. 17, No. 1, May 1976, p. 45.

[4] E. V. Araullo, op. cit.

management procurement strategies. Although the study was restricted to hospitals only, the model and methodology which the study provided serve as a useful tool of market analysis and management information feedback for food procurement in institutions.

Avery compared inventory data with the required quantities of each food item in 1976.[1] The report provided a working formula for determining the quantity of purchases required for each food item. The study also provided a method of forecasting demands for each food group, and the purchases required to bring a food item to a pre-set maximum.

Utilization Pattern

Lifquist's 1959 survey was followed by another in 1961 during which Lifquist tried to determine the utilization of processed foods in company cafeterias.[2] This study essentially provided a method for classifying foods according to the degree of processing.

Van Dress in 1965 used caloric inventory technique to estimate potential use of food types in civil defence centres.[3] The method was thought desirable for planning emergency feeding programs.

In the same year, Kirtley estimated the types and approximate volume of meats used by commercial food service by budgeting

---

[1] Arthur C. Avery, "Secrets of Food Purchasing," Food Management, Vol. 11, No. 9, Sept. 1976, p. 59.

[2] R. C. Lifquist, Expenditures for Processed Foods by Employee Food Service Manufacturing Plants, Research Report No. 458 (Washington, D.C.: U.S. Department of Agriculture, 1961).

[3] M. G. Van Dress, Estimated Number of Day's Supply of Food and Beverages in Establishments that Serve Food for On-premise Consumption--A Civil Defence Study, Marketing Research Report No. 707 (Washington, D.C.: U.S. Department of Agriculture, 1965).

expenditure on all foods.[1] His estimates showed that beef accounted for 60 per cent of all meats used in commercial establishments. Poultry was second in line and fish, third. The proportion of pork used was very small, while lamb and veal each accounted for a little more than 2 per cent of total meat used.

A dramatic upward trend in the use of prepared entrees has been reported in hospitals, in-plant feeding operations, and country clubs where there are no professional chefs, according to Quick Frozen Foods Magazine.[2] Similarly, it has been reported that the use of frozen convenience foods has enabled airlines to offer many different entrees.[3] Trans World Airlines, which carries 90 per cent of its menu frozen, is reported to do so in order to cut costs through increased productivity per employee.

New York City schools, which carried 20 to 25 per cent of their meals as frozen convenience meals, reported a planned 100 per cent frozen prepared items to provide a full hot lunch for the school children currently eating cold lunches.[4] And in Cleveland, the Board of Education used frozen pre-plated meals to feed 25,000 underprivileged pupils free hot lunches daily.[5] The frozen entrees system

---

[1] M. B. Kirtley, "A Survey of Meat Use in Restaurants in a Major Metropolitan Area of the U.S. Food Service," Research Digest, National Restaurant Association, Winter 1964-1965.

[2] "Systems Method Sparks Greater Use of Frozens in Institutions," Quick Frozen Foods, Vol. 34, Jan. 1972, p. 51.

[3] Ibid., p. 52.

[4] Ibid., p. 53.

[5] "Frozen Pre-plated Meals Solve Problem of Feeding Underprivileged Pupils," Quick Frozen Foods, Vol. 34, June 1972, pp. 47-48.

was used because of its cost-control factor.

Louise Sebastian of Flushing Hospital and Medical Centre, Flushing, New York, reported having top-quality meats by using pre-cooked frozens.[1] "In order to serve 1,200 meals daily to patients and personnel, I must rely heavily on frozen convenience foods, especially the pre-cooked meats, which can be prepared quickly," she said.

Rainsford (1975) did a study in which he compared the financial, managerial, and reconstitution differences between conventional and convenience foodservice systems utilized by selected colleges, universities, and hospitals.[2] The study showed that there was no single answer to the conventional vs. convenience question, but that foodservice managers must carefully assess their own particular situation in order to determine which course to take. In some cases, the conventional system may be more desirable, while in other cases, the convenience may be best, he said. The study indicated, however, that savings could accrue through use of convenience foods in that labour costs are generally reduced and employee productivity increased. Also, food costs may not be increased as much as anticipated due to better portion control, minimal left-overs, and less waste.

Smith's study in Canada on the use of convenience foods concluded that the lack of demand for convenience foods in institutions was due

---

[1] "Hospital's Demand for Top Quality Meats Met by Pre-cooked Frozens," Quick Frozen Foods, Vol. 35, August 1972, p. 49.

[2] Peter Rainsford, "Pre-Cooked Frozen Entrees : A Comparison of Reconstitution Techniques," The Cornel Hotel and Restaurant Administration Quarterly, Vol. 16, No. 1, May, 1975, pp. 64-69.

to the fact that the quality and taste of fresh foods had not been incorporated into convenience foods, and that much of the demand for convenience foods came from institutions where the "captive audience" had no choice but to accept the convenience foods provided.[1] Smith's report also stated that "claimed savings are illusory because people are still required to prepare the foods. The cost of convenience products is at present 2½ times the cost of raw ingredients, whereas an ideal situation would be a cost cut to 1½ times that of raw ingredients." Smith argued that the most important reasons for convenience foods not being used more by the food service industry are quality, cost, and variety deficiencies.

There have been indications, however, that the use of convenience frozen foods is being adopted in in-office and industrial cafeterias.[2] The reasons given were that convenience foods cut cost and prevent "chaos" in the kitchen. Directors who have switched to a frozen convenience food concept said the system minimized the investment in equipment and required little manpower. In addition, the frozen hot lunches did prevent the problem of waste inherent in conventional kitchen operations.[3]

Food Service System Operations

Lowrie's (1977) preliminary report on the proposed Alberta Food

---

[1] Arthur Smith, Food Industry in Canada--Meat Industry Report (Toronto: Maclean-Hunter Publication, 1972), p. 28.

[2] Robert Peltz, "Unions Voice No Objection to Use of Frozen Foods in Institutional Operations," Quick Frozen Foods, Vol. 34, Jan. 1972, p. 53.

[3] "Small Day Care Centres Loom as Giant Market for Frozen Prepared Lunches," Quick Frozen Foods, Vol. 35, Dec. 1972, pp. 31-36.

Corporation supported Smith's opinion.[1] In his study, Lowrie compared a conventional kitchen operation managed by an institution with a private system of food service in which the planning, purchasing, and preparation of the food service in hospitals was contracted to a food management company or centred in a commissary. Lowrie used a budgeting approach among Alberta hospitals. His study showed an improvement in food service and cost for a private operation over government owned and operated kitchen facilities; that is, institutional foodservice provided via the private caterers was estimated to cost the government 24.3 per cent less than it would have if the foods had been purchased and prepared by the government institutions themselves.

A report similar to Lowrie's was given by Institutions/Volume Feeding on the system of food service in some schools in Pennsylvania, United States.[2] The magazine reported the use of a central commissary to prepare school children's meals instead of individual school cafeterias. A maximum of 15,000 meals were prepared in the commissary every day to be transported in bulk to 22 schools and 16 Head Start Centres. The system was reported to be offering every student in the district a tasty, nutritious, hot lunch every school day at reasonable cost. It was also found to be efficient in reducing the rising food costs in that more students ate than before and they could be served by the same number of employees. It also led to more participation by the students in school lunches.

---

[1] W. W. Lowrie, op. cit., p. 1.

[2] "Commissaries--Now, Hot Lunch for All Kids at Reading Schools," Institutions/Volume Feeding, Vol. 75, Nov. 15, 1974, p. 35.

General Studies in Institutional Food Purchases

In 1972 the Agricultural Marketing Division of Alberta Department of Agriculture conducted a food industry survey to determine what the food industry felt about certain commodities, and to learn how commodity and producer groups might provide better service, different packaging, etc.[1] The Department itself was interested in finding out what products could be improved and made more acceptable to industry. The survey concluded that:

(a) The quality of all products was good to excellent.

(b) The supply of veal and lamb was not sufficient to meet industry demand.

(c) Seasonal shortages of choice cuts of beef increased prices to the extent that substitute products were in demand.

(d) The packaging and delivery of meat supplies needed to be improved.

(e) There was a trend in industry to demand more portion cuts of meat.

(f) Better promotion of pork products should increase public acceptance.

(g) The same holds true for veal and lamb; however, supplies must also be increased.

The 1972 survey was followed up by a similar one conducted by the Nutrition and Food Marketing Section of Alberta Agriculture in 1974.[2]

---

[1] Alberta Department of Agriculture, Report on Survey of Food Establishments (Edmonton, Alberta: Agricultural Marketing Division, 1972).

[2] Alberta Agriculture, Report on Institutional Buying Patterns and Marketing Channels (Edmonton, Alberta: Nutrition and Food Marketing Section, 1974).

The scope of the 1974 survey was more specific. The study dealt with the institutional segment of the Alberta HRI trade. The survey sought to determine what percentage of total institutional food purchases was produced in Alberta, and to evaluate the degree of knowledge about Alberta processed food products and the general sophistication in the food service industry. The result showed that 98 per cent of the total beef purchases by institutions surveyed was produced in Alberta, but only 7 per cent of lamb purchases were Albertan; the rest came from New Zealand. Alberta pork was estimated as 94 per cent of total institutional purchases, while Alberta-produced poultry accounted for 81 per cent of total purchases. The use of convenience foods was almost nil and large hospitals did not use portioned cuts of meats. While the reports lacked any economic analysis, they did provide data on which to base predictions of food utilization in different types of food operations.

An economic analysis of marketing potential for milk products in institutional markets was done by Cropp, et al. in 1967.[1] The study estimated the total institutional market as 4 per cent of total United States consumption of fluid milk, while sterilized milk concentrate accounted for about 18.5 per cent of total institutional demand.

Theoretical Aspects

This section deals with the exposition of the economic theories which help in understanding the behaviour of buyers and sellers in

---

[1] R. Cropp, H. R. Moede, and T. Graf, Milk Consumption and Food Patterns in Selected Eastern and Midwestern Institutions, Marketing Research Report No. 800 (Washington, D.C.: U.S. Department of Agriculture, 1967).

the institutional market when meats are purchased. These concepts and the analysis of purchasing behaviour may aid in explaining how the equilibrium point of exchange is determined with respect to prices, quantities of meats traded, and other non-price factors for various purchasing methods. The framework within which the theoretical discussion proceeds is the Bainsian market structure model.

The Bainsian Market Structure Model[1]

The Bainsian model assumes a deterministic sequential pattern of reasoning. Basically it involves the concept of structure, makes inferences as to market conduct, and reaches conclusions on market performance. The major focus of this investigation, however, is on the second parameter, i.e., market conduct as it relates to meat purchasing patterns. Some emphasis, however, is placed on discussions of certain structural variables such as the number and relative size of firms which appear to play an important role in determining meat purchasing patterns.

Structure

Bain defines market structure as the organizational characteristics of a market which determines the relations of sellers in the market to each other, of buyers in the market to each other, of the sellers to the buyers, and of sellers established in the market to other actual or potential suppliers of goods, including potential new firms which might enter the market.[2] Thus market structure concerns

---

[1] Joe S. Bain, Industrial Organization (New York: John Wiley and Sons, Inc., 1959), p. 7.

[2] Ibid.

these characteristics of the organization of a market which seem to influence strategically the nature of competition and pricing within the market. When analyzing market structure problems, major emphasis is generally placed on the following strategic aspects:

1. degree of seller or buyer concentration (number and size of sellers);
2. degree of product differentiation;
3. conditions of entry and exit.

The characteristics of market structure which are emphasized in this study are: (1) the degree of seller (meat packers and processors) concentration--described by the number and size distribution of sellers in the market, (2) the degree of buyer (various institutions) concentration--described by the number and size distribution of buyers, (3) degree of product differentiation--described as various cuts of each type of meat and food service systems like catering and vending, and (4) entry barriers as may be instituted by the selling policies of large packers.

Conduct

Market conduct refers to the modes of behaviour exhibited by firms as they function within a market. Bain defines conduct as concerning "the composite of acts, practices, and policies . . . used in arriving at and in some way coordinating . . . decisions as to what prices to charge, what outputs to produce, what selling cost to incur, what product designs to offer, and so forth."[1] The characteristics of market conduct investigated in this study include

---

[1] Joe S. Bain, op. cit., p. 266.

(1) consumption and buying patterns of buyers, (2) competitive and negotiative strategies of suppliers and purchasers of meats, and (3) the pricing mechanisms of suppliers.

Patterns of Conduct and Industry Structure

Caves notes that economic theory tells one that each major type of theoretical industry provides a different scope within which firms may choose behavioural patterns.[1] That is, the nature of market conduct is significantly affected by the structure of the industry (or buying group).[2] Under pure competition, for example, where one finds low concentration, insignificant barriers to entry, and no product differentiation one also finds a limited spectrum of conduct patterns. Price is set by the market as a result of the structure of the industry. A homogeneous product makes product differentiation difficult. Thus sales promotion and advertising policies are insignificant. Within the perfectly competitive market little can be done by the firm to influence prices, product design or coordinate seller activity.

A further aspect of market conduct involves the type of negotiative relations which apply between sellers and buyers. Viewing pure competition, oligopoly, and monopoly as the three feasible structural alternatives one can construct nine alternative

---

[1] Richard Caves, American Industry : Structure, Conduct, Performance (New Jersey: Prentice-Hall, Inc., 3rd Edition, 1974), p. 37.

[2] The discussion in the following paragraphs with regards to competition and conduct patterns is couched in reference to the selling side of a market. It also applies equally to the buying side.

market structure combinations (Table 2.1) from which purchasing behaviour in the institutional market can be analyzed.

Economic Models

The economic models adopted in explaining the behaviour of buyers and sellers in the institutional market are those of bilateral oligopoly, and the theory of "few dominant firms with competitive fringe." The models are chosen because they aid in depicting the nature of industry structure and patterns of market conduct characteristic of the buyers and sellers in the institutional market in Alberta.

The institutional market in Alberta has two structural patterns:

1. A pattern consisting of a group of few large firms (packers and processors) on the selling side of the market, and a similarly few large institutions on the buying side of the market. This group controls a high proportion[1] of the meat trade in the surveyed institutions, and these groups appear to act as market leaders.
2. The second structural pattern is that of a larger number of smaller packers and processors on the selling side, and a similarly large number of smaller institutions on the buying side of the market. These groups appear to act as market followers in the institutional meat trade.

The first part of this section reviews the major behavioural models that have been postulated to explain the behaviour of firms in

---

[1] In Chapter V of this study an estimated 75 per cent of the total volume of meat purchased by the surveyed institutions were supplied by the four largest firms, while the largest 13 of the 63 surveyed institutions purchased an estimated 71.4 per cent of the total volume of meats used (Appendix B2).

TABLE 2.1

NINE HYPOTHETICAL MARKET STRUCTURE COMBINATIONS

	Market	
	Sellers	Buyers
1.	Pure competition	Pure competition
2.	Pure competition	Oligopsony
3.	Pure competition	Monopsony
4.	Oligopoly	Oligopsony
5.	Oligopoly	Monopsony
6.	Oligopoly	Pure competition
7.	Monopoly	Monopsony
8.	Monopoly	Pure competition
9.	Monopoly	Oligopsony

Source: B. Gnauch, "An Economic Analysis of Market Conduct in Five Agricultural Input Industries." Department of Agricultural Economics, University of Minnesota, Minneapolis, 1968.

a structure of bilateral oligopoly. The second part provides a theoretical discussion which may aid in explaining conduct of buyers in a market composed of a few dominant firms (or buyers) with a competitive fringe of a larger number of smaller purchasers. This case is probably the most important situation in the institutional market for meat in Alberta because many market conduct variables such as prices and product varieties are determined under conditions which are neither atomistic nor completely oligopolistic.[1] The third part of this section is devoted to the discussion of most common methods of purchasing meat by institutions.

Theory of Bilateral Oligopoly[2]

Bilateral oligopoly refers to a structural setting characterized by relatively few firms on the selling side and relatively few firms on the buying side of a market. The problem can be interpreted as a negotiative process involving bargaining based on relative market power.[3]

Bilateral monopoly is used as a diagrammatic schema for the illustration of bilateral oligopoly because the former is a manageable theoretical model which contains negotiative relations which are relatively simple.[4] Bilateral monopoly is a market situation composed

---

[1] William Fellner, Competition Among the Few : Oligopoly and Similar Market Structure (New York: A. A. Knopf, 1949), p. xi.

[2] The following discussion relies heavily on William Fellner, op. cit., pp. 240-247; and Tibor Scitovsky, Welfare and Competition (Chicago: Richard A. Irwin, Inc., 1951), pp. 416-422.

[3] Tibor Scitovsky, op. cit., p. 419.

[4] William Fellner, op. cit., p. 244.

of one buyer and one seller. Graphical analysis of bilateral oligopoly is complex because of the multiplicity of possible demand, supply and cost functions. Even in the simplest case, bilateral duopoly (a market consisting of two sellers and two buyers) there are a variety of formal models involving different behavioural assumptions. The following provides a graphical analysis of bilateral monopoly drawn from Fellner.[1]

Figure 2.1 shows four alternative situation results arising out of four different behavioural assumptions which are related to relative market power. The AC and MC_s curves in Figure 2.1 are the seller's average and marginal cost functions, respectively. The MC_s curve is also the seller's supply function and represents the buyer's average cost function. The MC_B curve is marginal cost function of the buyer. It is the marginal cost of buying an additional pound of meat. The AR and MR_s curves are, respectively, the average and marginal revenue functions of the supplier. The MR_s curve is also the buyer's demand function or what can be called the buyer's marginal revenue product function.

Simple monopolist vs. price taker monopsonist. If the seller acts as a simple monopolist and the buyer is a price taker, then the seller fixes the price most favourable to him. The seller would equate the MR_B curve of the buyer with his marginal cost function (MC_s) because the MR_B curve is marginal to the marginal revenue (MRP_B) or demand functions of the buyer. The equilibrium price and quantity would be P_1, and Q_1 (Figure 2.1).

---

[1] Ibid., p. 244.

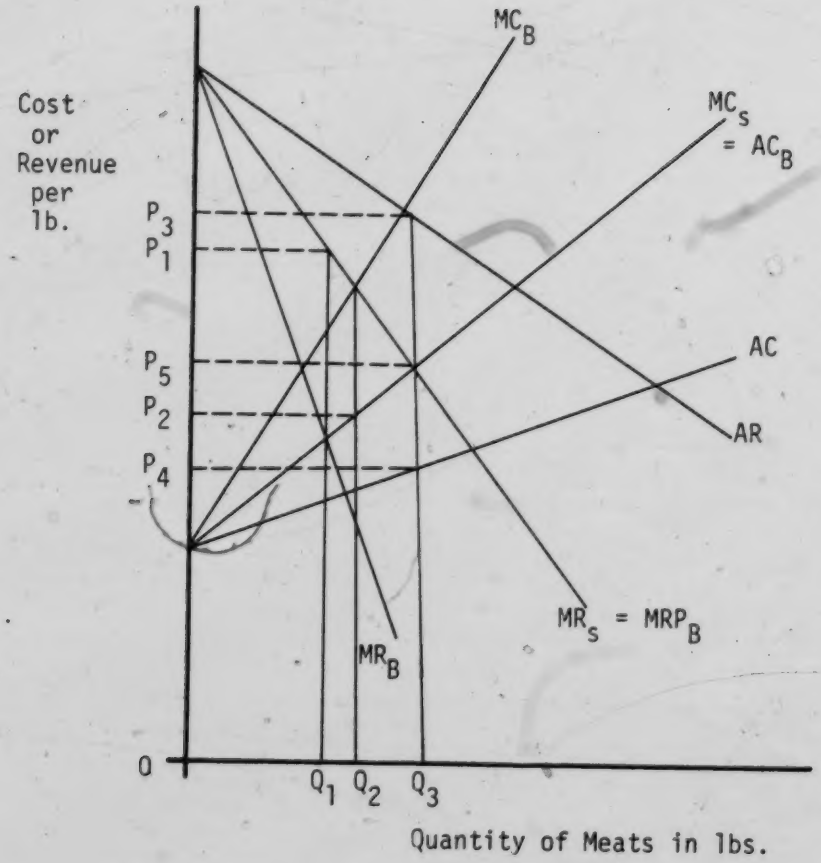


FIGURE 2.1: Model for Bilateral Monopoly with Increasing Costs

Source: William Fellner, Competition Among the Few : Oligopoly and Similar Market Structure (New York: A. A. Knopf, 1949), p. 244.

Price taker monopolist vs. simple monopsonist. Here the buyer is assumed to be a simple monopsonist and the seller a price taker. The buyer, therefore, would maximize profit by choosing the optimum price on the seller's supply function, (MC_S) Figure 2.1. He, the monopolist, would equate his MC_B with the seller's marginal revenue function MR_S. The buyer would, therefore, purchase quantity Q_2 and pay the seller price P_2.

Joint profit maximization. Under this alternative the buyer and seller equate the marginal cost function (MC_S) with the marginal revenue function (MR_S). The equilibrium quantity bought and sold would be Q_3 but the price is indeterminate. It would, however, fall between P_3 and P_4. The exact price would be determined through negotiation.

Price taker monopolist vs. price taker monopsonist. This case is analogous to assuming that the monopolist's supply function (his marginal cost function MC) is equated with the monopsonist's demand function (his marginal revenue product function) and equilibrium price-quantity combination is determined by their intersection, i.e., Q_3 P_5. This assumed behaviour achieves a result equivalent to pure competition. That is, a solution where supply equals demand. This solution is highly improbable because it assumes that buyers and sellers will not learn through experience that each has a false idea as to the other's relative market power.[1]

Fellner also argues that bilateral monopoly is a manageable

---

[1] Ibid., p. 242.

theoretical model because it contains only negotiative relations which within themselves are relatively simple.[1] When one expands this model to consider even the simplest case of bilateral oligopoly the negotiative relations not only become more complex, but in addition one incurs equally complex types of competitive relations. Consideration of an expanded market setting where four or five sellers confront four or five buyers further expands negotiative and competitive relations. Selling firms must not only learn how rivals respond to their and other firm's policy changes but, in addition, must acquire knowledge of the market's competitive and negotiative strategies.

Model of Dominant Firms with a Competitive Fringe

"This model is alleged to describe behaviour in industries having one or a few large firms and a number of smaller ones."[2] The institutional meat industry in Alberta appears to approximate a prototype for the model in terms of market structure, market sharing, price and non-price competition, and other learned behavioural response.[3]

The larger firms in the model are usually assumed to be leaders in the market, while the competitive fringe of a large number of smaller firms are assumed followers. The basic operating assumption

---

[1] Ibid.

[2] Kalman J. Cohen and Richard M. Cyert, Theory of the Firm, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 2nd Edition, 1975), p. 245.

[3] Structure, market share and competitive strategies of buyers and sellers in the institutional market are discussed in Chapters IV and V. For an outline of this model, see F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago: Rand McNally College Publishing Company, 1970), pp. 164-165.

is that the dominant firm sets the price of a product and allows the smaller firms to sell or buy all they want at that price, and the dominant firm sells the rest.[1]

The behaviour of firms in this market setting is illustrated in Figure 2.2 drawn from Scherer.[2] The market demand curve for all the firms is DD'. The supply curve for all members of the competitive fringe together is S'S. GBD is the dominant firm's demand curve, GMR its marginal revenue curve and MC its marginal cost curve. At prices OS' and lower, the dominant firm has the entire market to itself and no output will be supplied by the fringe members (because price is less than the minimum average variable cost of every fringe producer). At price OG the competitive fringe supplies all the output the market will absorb at that price, while no residual demand is left over for the dominant firm. Intermediate quantities of fringe supply are thus called forth at prices between OS' and OG. The dominant firm, therefore, either equates its MR and MC to establish the price OP, or it arbitrarily sets the price at OP or any other level between OS[1] and OG. At price OP, for example, the dominant firm will produce and sell OX = PZ units, while the competitive fringe firms produce and sell ZA = PT units.

Some Shortcomings of the Analysis

There are weaknesses to the foregoing analysis. The features of dynamic analysis, joint or interdependent demand, supply and cost

---

[1] Kalman J. Cohen and Richard M. Cyert, op. cit., p. 245.

[2] F. M. Scherer, op. cit., p. 165.

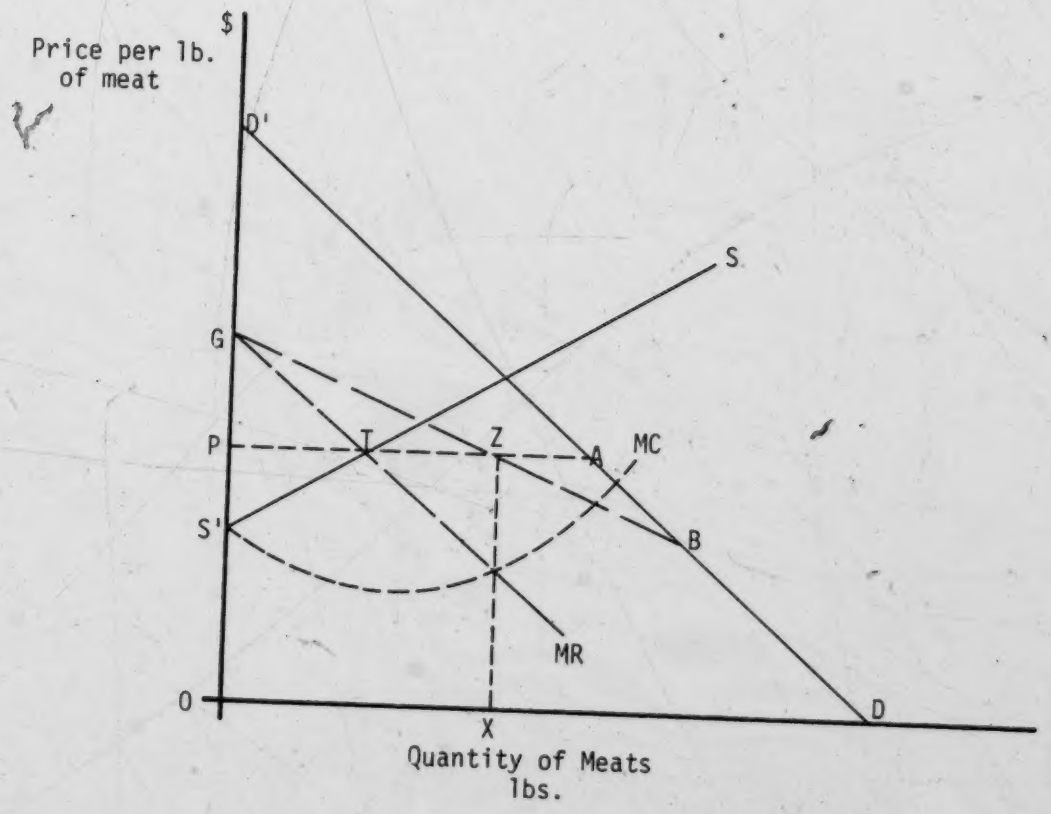


FIGURE 2.2: Static Model of Dominant Firm with Competitive Fringe Firms

Source: F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago: Rand McNally College Publishing Company, 1970), p. 165.

functions are not fully considered. The effect of vertical integration on the supplying firms is not considered also. Perhaps an important weakness of the models used is their failure to determine how to deal with the existence of circular interdependence (inter-firm competition) and the possible extent of action parameters involved in negotiative relationships. The analysis does not deal with the distribution of any price reduction secured by strong buyers.[1]

Methods of Purchasing Meat

Figure 2.3 shows various methods of purchasing meats in the food-service industry which have been outlined by Berberoglu and Kotschevar. This study suggests, however, three of these methods were most frequently used by the institutions surveyed. These most prevalent methods are spot buying, open bid buying, and negotiative buying. The methods are described below.

Spot Buying

Spot buying is used when institutions buy their meats on sight from route salesmen, or at the local supermarket or meat purveyor. It is frequently used by small institutions who have little need for frequent volume buying, but buy only according to immediate demands. The purchases are made usually by placing orders through the telephone,

---

[1] A criticism of the countervailing power thesis is that there is no guarantee that price reductions secured by strong buyers are passed down to consumers in the form of lower retail prices. See: F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago, Ill.: Rand McNally College Publishing Company, 1970), p. 250. But in captive institutions such as those considered in this study, such a criticism may not be tenable.

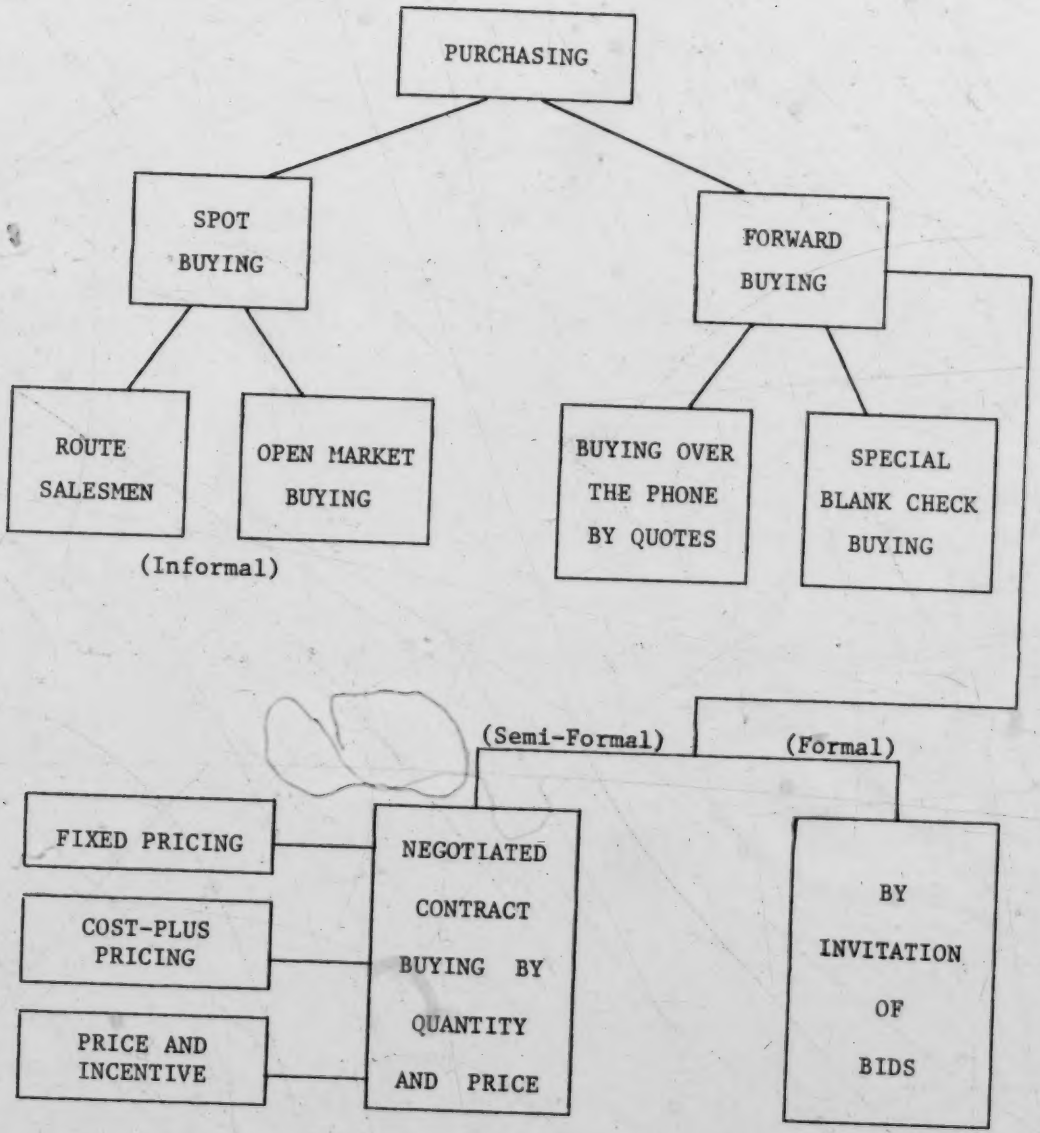


FIGURE 2.3: Purchasing Methods by Institutions

Source: This conceptual framework was developed from the works of H. Berberoglu, Restauranteurs and Hoteliers Purchasing Book (Burlington, Ontario: Canadian Business Services Ltd., 1976), p. 9; and

Lendal H. Kotschevar, Quantity Food Purchasing (New York: John Wiley and Sons, Inc., 2nd edition, 1975), pp. 32-33.

or visiting the place where the meat is sold.

The merchandise is inspected, the price is agreed upon, and the transaction takes place. The purchases are made on terms (quality, price, delivery, service) viewed advantageous to the buyer. This type of buying is similar to household buying at the retail supermarket except that larger quantities may be purchased. Prices at which meats are bought under this method are often the same as the daily retail prices of meats.

Tender and Bid Buying Method

In this method of buying (as in the negotiative method discussed later in this section) the emphasis is on a form of procurement.[1] The process of tender and bid entails economic manoeuvres, strategies and/or rivalry among many meat suppliers for common objectives. It is the endeavour of one to gain what another endeavours to gain at the same time. Within the concept of the market it refers to the relationships between sellers as they try to secure product outlets and/or buyers as they try to secure a source of inputs or products.

This method of buying is different from spot buying in that the procedure is highly formal. Institutional buyers under the tender and bid process invite suppliers to make offers or to submit tenders on orders in which the purchasers set forth rather rigid specifications. Specifications include such things as grade, weight, and terms of delivery. Sale by specification normally carries the agreement or understanding that any product which does not meet the specifications

---

[1] Phillip Kotler, Marketing Management--Analysis, Planning, and Control (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976), p. 114.

upon delivery may be rejected by the purchaser.

Upon receipt of offers from several prospective suppliers, the purchaser compares offering prices. Other things being equal, the lowest bids (prices) are accepted.[1] The reason is that since there is an established standardized grade for different types of meat (especially homogeneous products like whole carcass), it becomes naturally economical to buy from the lowest bidder. Institutions that do not buy whole carcasses but buy differentiated products such as sides, loins, quarters, or portioned cuts according to specifications peculiar to each institution may not necessarily buy from the lowest bidder unless the quality specification requirements are met. These institutions are ready to pay the higher price differentials for the required quality.

Analysis of Tender and Bid Buying Operations

This section deals with a graphical illustration of a merchandizing procedure which involves the tender and bid buying method. The illustration is intended to explain competitive manoeuvres between a group of sellers acting independently to secure the custom of a buyer in a market setting which closely approximates perfect competition. The competitive manoeuvres involve successive open bids on prices, or offers of favourable non-price terms by meat suppliers to institutional buyers.

---

[1] The lowest bidders do not necessarily secure the contracts except where products are homogeneous. Where differentiated meat products are demanded, advantages derived from higher quality meats may well outweigh the higher price differentials charged by the contract winner.

The analysis of this section rests mainly on the assumption of zero bargaining costs to two parties engaged in an exchange and assumes that the tender and bid buying process does in fact involve perfect competition on both the buying and selling sides. Nicholson[1] has argued that if exchange is costless the two parties left on their own will arrive at a Pareto optimal point, and that the outcome of the exchange (except for determining which possible Pareto optimal point is arrived at) will be independent of who has greater market power.

The problem of exchange in an open-bid buying operation between a group of sellers on one side and of buyers on the other can be illustrated with the aid of a superimposed indifference map in an Edgeworth Box model (Figure 2.4).[2] If we combine all the features (e.g., price, quality) which are subject to bids into one magnitude--utility or satisfaction--we can assume that buyers strive for the highest level of utility or satisfaction, and suppliers are assumed to pursue a similar goal.

The concern in this model is with the efficiency of exchange between the goods supplied by firms and the price offering of each buyer. Under conditions of competitive bid exchange, the seller who wins the bid and the buyer would trade at point H--the point of intersection of the seller's price-offer curve and the buyer's price-acceptance curve. Trade between them will be efficient because at

---

[1] Walter Nicholson, Microeconomic Theory--Basic Principles and Extensions (Hinsdale, Illinois: The Dryden Press Inc., 1972), p. 519.

[2] This discussion is based on the work of Tibor Scitovsky, Welfare and Competition (Chicago: Richard D. Irwin Inc., 1962), pp. 414-422.

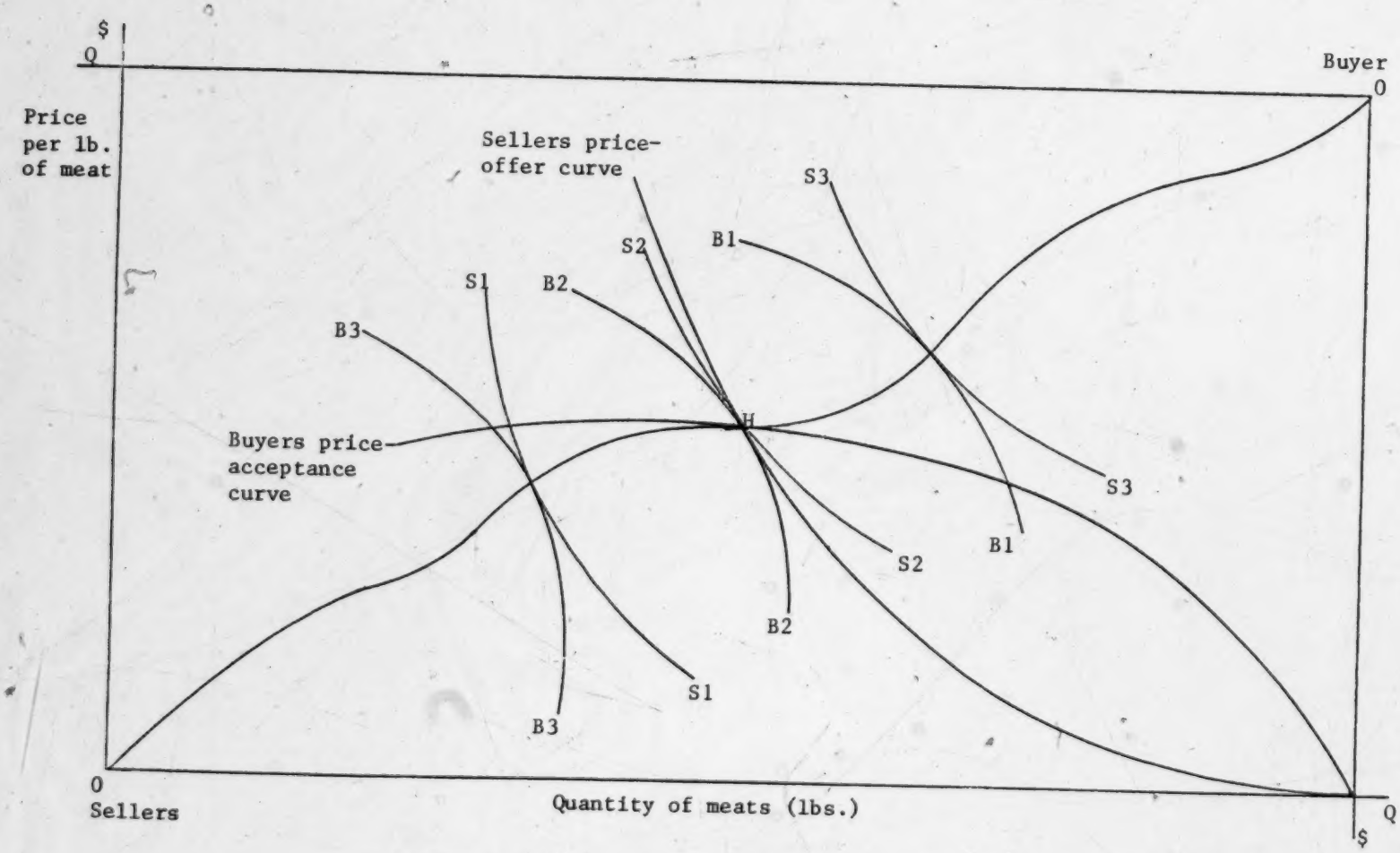


FIGURE 2.4: Model of Open Bid Buying Operations

Source: Tibor Scitovsky, Welfare and Competition (Chicago, Ill.: Richard D. Irwin, Inc., 1951), p. 412.

point H neither party can improve his position except at the expense of the other. Hence, when buying takes place under the competitive bid process, market price paid by the buyer will equal or approximate the purely competitive price.[1]

Negotiative Buying or Bargaining Method

In this section a formalized analysis of a different type of bargaining behaviour which appears relevant to some sections of the institutional meat market is presented. The analysis is intended to give a picture of the kind of negotiations which take place between the relatively small numbers of meat packers and the larger purchasing institutions, and to present a conceptualization of the bargaining process which takes place between the two sides in an exchange process.

Basically, negotiation is the act of bargaining or the reconciliation of opposing positions with the objective of coming to an agreement. As it applies to this investigation, it relates to the behavioural patterns existing between big buyers and sellers within the institutional market.

In negotiative buying the purchasing manager works with one or a few suppliers and directly negotiates a contract with one of them covering the project and terms. It is assumed that one seller negotiates separately with a buyer in a market setting which does not involve a bidding process. Contracts have many variations such as

---

[1] Ibid., p. 416.

cost-plus pricing, fixed-pricing, and fixed price-and-incentive.[1]

Characteristics of the Negotiative Buying Method

Negotiative buying is a less formal method of buying meat than the tender and bid. It is also different from the latter in that other factors besides the price of the product become very important in meat purchasing. Negotiated buying is employed by institutions where the quantity and price of the meat over a period of time are contracted. It becomes a favourite tool when seasonally limited food products tailored to the needs of the food operator are required. In that condition the contract requires that the institutional buyer receives first choice in purchase of the specified type of meats.[2] It can be a flexible purchasing tool for quick decision action in a fluctuating market.

Table 2.1 shows nine alternative market structure combinations. Conduct arising out of negotiations can be highly influenced by the relative power of the buyers and sellers. In the nine hypothetical market structures listed in Table 2.1 it is combinations 4, 5, 7, and 9 which give rise to the most complex negotiative relationships.

Theory of Bargaining or Negotiation

The best known discussion relating market power on the buyer's side to market power on the supplier's side is Galbraith's theory of

---

[1] P. Kotler, op. cit., p. 115.

[2] G. R. Winter, Conduct in Canadian Food Marketing (Ottawa: Agricultural Economics Research Council of Canada, 1969), p. 146.

countervailing power.[1] Galbraith argues that the force compelling sellers to conform to consumer wants and to hold prices near cost is not the inter-seller competition traditionally stressed by economists, but countervailing power exercised by strong buyers. He also argues that a systematic propensity for power on the buyers' side emerges whenever power exists on the sellers' side:

> . . . Power on one side of a market creates both the need for, and the prospect of reward to, the exercise of countervailing power from the other side. . . . The first begets the second. . . . Retailers are required by their situation to develop countervailing power on the consumer's behalf. . . . At the end of virtually every channel by which consumers' goods reach the public there is, in practice, a layer of powerful buyers.[2]

BerBeroglu[3] expressed the existence of countervailing power in the HRI trade where big institutional buyers tend to negate the powers of oligopolist food suppliers. He asserted that "large companies dealing with big quantities have a sizeable purchasing power and can dictate prices, whereas small establishments are deprived of this advantage," and that "another way of purchasing has evolved lately, whereby large hospitals combine their orders and buy from the manufacturer at considerably lower prices."[4]

As a rule, where countervailing power is exercised, such as between two monopolists or oligopolies, the terms of contract are settled by bargaining or negotiation. Bargaining between two

---

[1] J. K. Galbraith, American Capitalism : The Concept of Countervailing Power (Boston: Houghton Mifflin, Rev. Edition, 1956).

[2] Ibid., pp. 111, 113, 117, 120.

[3] H. Berberoglu, Restauranteurs and Hoteliers Purchasing Book (Burlington, Ontario: Canadian Business Services Ltd., 1976).

[4] Ibid., pp. 3, 11.

oligopolies or monopolists can also be illustrated with the use of indifference maps as was illustrated by Scitovsky and repeated in the following Figure 2.5.[1] Bargaining will take place between points N and M. Point M is where the buyer's price-consumption curve touches the seller's highest indifference curve.[2] The seller, being a monopolist or oligopolist on his side of the market, will set price Ps and get to M. Point N is where the seller's price-offer curve reaches the buyer's highest indifference curve, and the buyer will set price Pb to get to N. Thus trade will take place at some point on the price-consumption and price-offer curves that lie between points M and N. When the two parties have almost equal bargaining power, trade will take place at a price very close to the perfectly competitive price.

Scitovsky (without empirical content) argued, however, that if bargaining results in a price agreement only, the quantity of goods actually bought and sold will be different from the quantities desired for exchange by the parties, thus opening room for rounds of negotiations.[3] Quantity traded will be equal to what it would have been had the same price been set unilaterally by one of the parties. The exact quantities traded will only equal desired quantities if:

1. the price agreed upon happens to be the perfectly competitive price;
2. bargaining is concerned with both price and quantity exchanged.

---

[1] Tibor Scitovsky, op. cit., pp. 416-419.

[2] Highest, that is, of all the indifference curves with which the buyer's price-consumption curve comes in contact.

[3] Tibor Scitovsky, op. cit., p. 418.

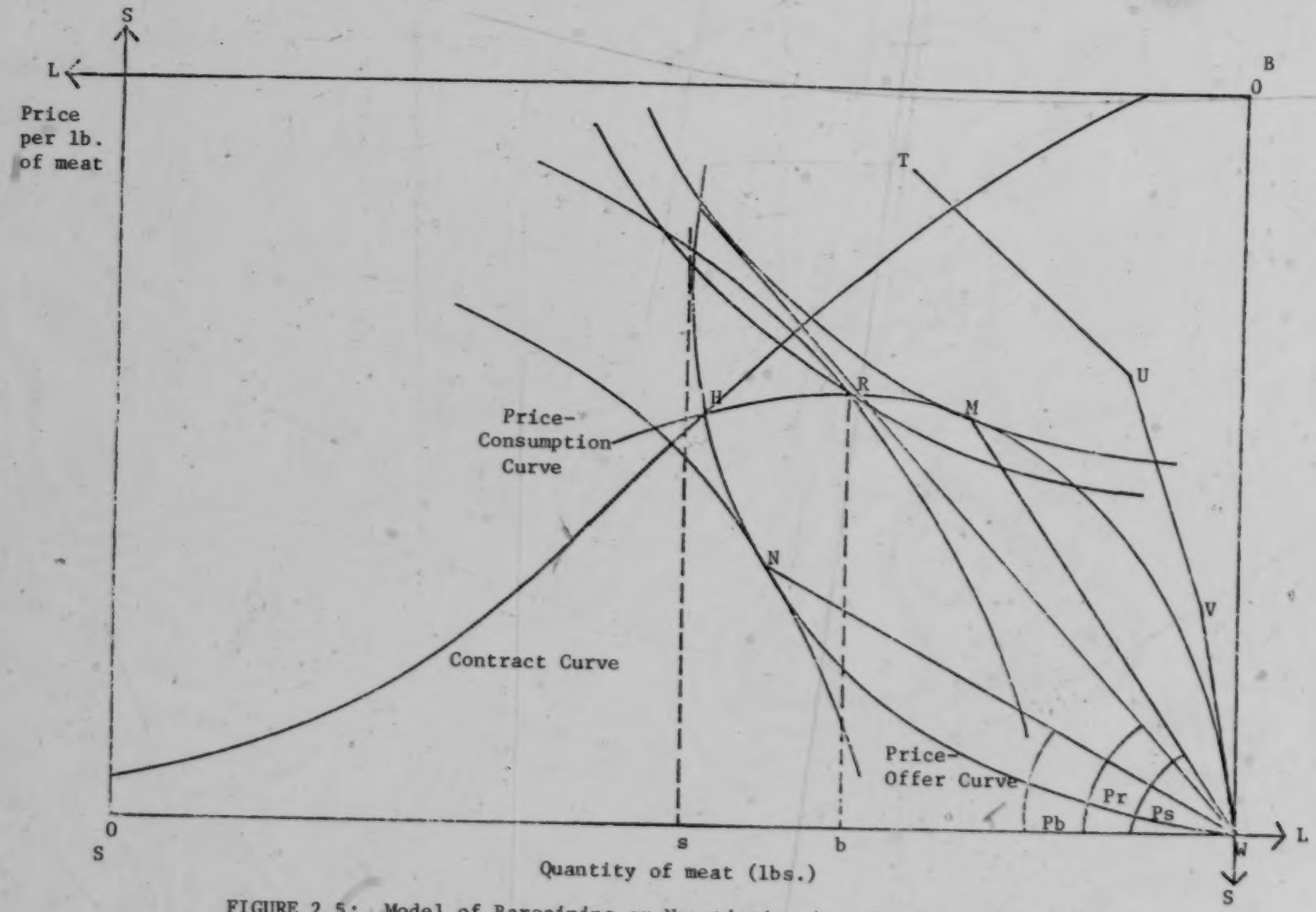


FIGURE 2.5: Model of Bargaining or Negotiation in a Merchandizing Exchange

Source: Tibor Scitovsky, Welfare and Competition (Chicago, Ill.: Richard D. Irwin, Inc., 1951), p. 417.

Quantity agreements thus become essential to the stability of price agreements. Bargaining that involves price and quantity tends to lead to a stable agreement, and the terms can be represented on the contract curve as H (Figure 2.5). As far as efficiency is concerned, therefore, results of negotiations between two oligopolies tend to be the same as perfect competition the more equal the bargaining powers of the parties to the exchange are. However, "efficient" positions established on the curve under the two market structure patterns will differ and would be determined by the parties' relative bargaining powers.

CHAPTER III

GENERAL METHODOLOGICAL PROCEDURE

In this chapter the methodological procedure adopted for obtaining information for the study is presented. A discussion of the observation, description, and classification of the facts needed for the study is conducted. Also discussed are the sources of information, method of data analysis, the statistical methods used for the treatment of data for each objective, and limitations of the methodological procedure.

Collection Procedure

The Sample

Information about the institutional meat purchase pattern in Edmonton and suburbs was obtained from a stratified random sample[1] of institutions in the study area. The stratification was based on assumptions from previous research, and preliminary personal discussion with knowledgeable people in the institutional trade.

Previous studies have indicated that the size of an institution might have some influence on the food procurement policies and procedures as well as the types and quantities of foods included on the menu.[2] Methods of food procurement differ with the size of the food

---

[1] First, the population was stratified. Then samples were taken randomly from each stratum that is large in size using a table of random samples. In cases where stratum size is small, all institutions in the stratum were sampled.

[2] M. M. Mertens and B. Donaldson, "Factors Affecting Main Dish Menu Variety in Wisconsin School Lunch Programs," Journal of Home Economics, Vol. 56, No. 6, 1964, pp. 411-412.

operation. In most cases the larger size operations have a structured system for purchasing food. They have greater opportunities for obtaining the quality and the quantity of food needs by buying from larger suppliers. Mertens and Donaldson observed that when foods were purchased from a local retailer for school lunch programs in Wisconsin, variety on the main dish items was limited.

Another factor used to determine stratification of the institution was the food utilization pattern of the institution, i.e., the purpose for which foods are demanded. Some institutions have meal pattern requirements for nutritionally adequate meals at a specified portion size and cost for patients under care in various sex-age groups.[1] Examples are hospitals and related institutions. Some institutions buy meats mainly for lunch meals and for instructional purposes (e.g., schools and colleges and day-care centres), while some operate to provide foods for the needy. Examples are welfare homes and institutions.

Sources of Information

The most important source of information was the institutions themselves. In total, 63 institutions were interviewed. In addition, five institutional meat suppliers were surveyed. A preliminary sampling procedure was the basis of the data collection process.[2] First

---

[1] E. R. Irwin and F. Keller, "A Meal Pattern System Coordinated for Different Institutions," Hospitals, Vol. 43, No. 21, 1969, pp. 104-107.

[2] The theoretical foundation for this type of sampling technique is based on the works of Cochrane and Papandreou.

benchmark institutions were delineated in the City of Edmonton. At this preliminary stage of fact finding, interviews with senior representatives of the institutions, administrators, chefs, purchasing managers, dieticians, cooks, or persons of similar capacity, were conducted in order to obtain as much first hand information as possible. A questionnaire to be used for personal interviews was developed (Appendix A1). A pilot test of the questionnaire was conducted with some institutions to determine whether or not the questionnaire met the needs of the study. When the pilot tests suggested certain improvements could be made on the questionnaire, the questionnaire was revised (Appendix A2).

Although questionnaires were used, interviews were on a discussion basis. Open-ended questions were fully utilized to encourage the interviewee to express his opinion fully and to provide him with the opportunity to support his statements. The open-ended questions were particularly useful where questions would have been difficult to ask on a mail questionnaire, and where omissions in a mail questionnaire would have been difficult to interpret and the causes and reasons for the respondent's actions or attitudes could not have been obtained. After the interviews, representatives of the institutions and meat packing industry were asked to substantiate their views by filling out the questionnaires so points would be fully discussed before being considered for inclusion in the study. In some cases, institutions could not make available prices and quantity data for every product. In such instances missing values (especially prices) were imputed using averages of prices per pound of similar products.

The Data

The data used for this research are of two kinds: primary data and secondary data. The nature of each of these two types of data is given below.

The Primary Data

The primary data consist of all figures, percentages, quantities, and prices of meats used in institutions. These data were obtained from the institutions during the survey. The meat suppliers' responses to interviews and questionnaires comprise another type of primary data. Primary data are mostly used in this study.

The Secondary Data

Published annual reports by the Alberta Hospital Services Commission and the Alberta Social Services and Community Health constitute one type of secondary data. The Agricultural Processing and Manufacturing Guide, published by the Statistics Division of Alberta Agriculture, and Canada's Hospitality Business--The Fact File, published by the Foodservice and Hospitality magazine, are another type of secondary data. Published studies and texts and unpublished dissertations and theses dealing with food service in institutions are also used as secondary data.

Criteria for the Admissibility of the Data

For the data to be pertinent to the theme of this study, only the data on institutions which are essentially supportive or which operate

without the primary motive of generating a profit are used. This is done to eliminate eating places like private clubs, hotels, restaurants, etc. Also, only data from institutions which have a residence population of at least 10 people and which serve meats are used in the study to avoid muddling with household meat purchasing habits.

Type of Data Collected

The data collected for this research are:

1. the quantity of meat that goes to the surveyed institutions in Central Alberta in a month, the different types of meat cuts, and the various forms in which meats are traded, i.e., whether in whole carcasses or halves, sides, quarters, portioned cuts, or convenient pre-cooked forms;
2. the proportion of total meat bought by surveyed institutions that is accounted for by each type of meat or meat cuts; and
3. the factors which influence surveyed institutions' purchase of the types of meat they buy.

Information was also obtained on the supply side. It was necessary to know institutions' source of supply (either domestic or foreign), the reason for choosing the sources of supply, import proportion of total institution's supply, and the pricing mechanism used in the institutional market. Data and information were also obtained on monthly prices of various cuts of meats, the number of hot meals served in each institution per week, population (i.e., number of people served in each institution), and the nature of competition (whether price or non-price) in the institutional meat market.

Classification of Data

Data and information are thus collected and tested on the basis of size and utilization pattern or type of institution because of the differences in these factors with regards to the various institutions. However, much of the data are analyzed on the basis of all institutions together. This is done when institutional size or type is not relevant for analysis or when grand totals and averages are important. Also, in certain instances, lack of reported data for certain institutional sizes and types does make the analysis of little relevance by size or type.

Size Distribution Characteristics of the Institutions

To provide a structure for representing the population, the 63 institutions surveyed were classified according to size and utilization pattern or type (Tables 3.1 and 3.2). Size of institution is related to the average total number of meat meals served to patients or students, personnel, and guests per day. The institutions were classified into four size categories, viz., 199 and under, 200 to 399, 400 to 799, and 800 and over. Number of meat meals served per day per institution provides the best measure of food service capacities of various institutions.[1]

The average size of institutions within each institutional type is given in Table 3.2. The largest institutions predominate among the

---

[1] R. Cropp, Economic Analysis of Marketing Potential for Sterilized Milk Concentrate in Institutional Markets (Madison, Wisconsin: Department of Agricultural Economics, University of Wisconsin, 1968), p. 35.

TABLE 3.1

CLASSIFICATION OF INSTITUTIONS BY POPULATION

AND SAMPLE SIZES

Type of Institution	Population	Sample Size Surveyed	Percent of Population Surveyed
Hospitals and Nursing Homes	35	28	80
Universities and Colleges	7	5	71.4
Schools and Day-Care Centres	159	10	6.25
Welfare Homes and Institutions	20	13	65
Penal Institutions	2	2	100
Defence Centres	1	1	100
In-Plant/In-Office Cafeteria	Unknown[1]	4[2]	—
Total	224+Unknown	63	

[1] The actual population of the in-plant/in-office cafeterias (usually operated by the food management companies) was not made available. However, information on cafeterias operated by the CNIB in the study region was provided by the management without naming which cafeterias.

[2] One of these four institutions represents an aggregate of 17 in-plant/in-office cafeterias served by the food management company in the study area.

Source: Appendix B1.

TABLE 3.2

CLASSIFICATION OF TOTAL INSTITUTIONS SURVEYED BY TYPE AND SIZE[1]

Type of Institution	Average Daily Meat Meals Served				Total for Each Institutional Type	Institutional Type as Per Cent of Total Surveyed
	0-199	200-399	400-799	800 and over		
						%
Hospitals and Nursing Homes	8	7	6	7	28	44.4
Universities and Colleges	1	2	0	2	5	7.9
Schools and Day Care Centres	7	2	1	0	10	15.9
Welfare Homes and Institutions	11	1	1	0	13	20.6
Penal Institutions	0	1	0	1	2	3.2
Defence Centres	0	0	0	1	1	1.6
In-plant/In-office Cafeteria	1	2	1	0	4	6.4
Total	28	15	9	11	63	100.0

[1] Institution size is the average total number of meat meals served per institution per day.

Source: Appendix B1.

hospitals, the universities and colleges, the Defence Centre, and the penal institutions which serve over 800 meat plates per day. The smallest institutions predominate among the Welfare and Social Service institutions, schools and day-care centres, and in-plant/in-office cafeterias. The size distribution of all the institutions was found to be positively skewed. The Pearsonian Coefficient of Skewness had a value of 1.92.[1] In terms of the number of meat plates served per institution per day, the mean value for all 63 institutions sampled was 655, the median 213, and the mode 300. Almost 44 per cent (i.e., 28) of the 63 institutions served between 1 and 199 plates per day. Institutions serving 200-399 meat meals per day (i. e., 15 of 63) constituted about 24 per cent (23.8 per cent), while the rest, the two largest size classes, constituted 31.7 per cent of all institutions surveyed.

Type of Institution According to Meat Utilization Pattern

The criterion used in the classification of institutions according to type follows the conventional classification adopted by the American and the Canadian foodservice industry.[2] A schematic diagram of the classification is shown in Figure 3.1.

(a) Institutions which serve as centres of higher education, i.e., post-secondary institutions which have boarders, were ranked

---

[1] The Pearsonian Coefficient of Skewness is calculated as follows:

$$Sk = \frac{3(\text{mean} - \text{median})}{\text{Standard Deviation}} = \frac{3(655.35 - 213)}{690.98} = 1.92$$

See John E. Freund, Modern Elementary Statistics (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 4th Edition, 1973), p. 81.

[2] United States Department of Agriculture, Statistical Bulletin No. 476, 1974, p. 89; and Food Service and Hospitality Magazine--The Fact File, 2nd Edition, 1977.

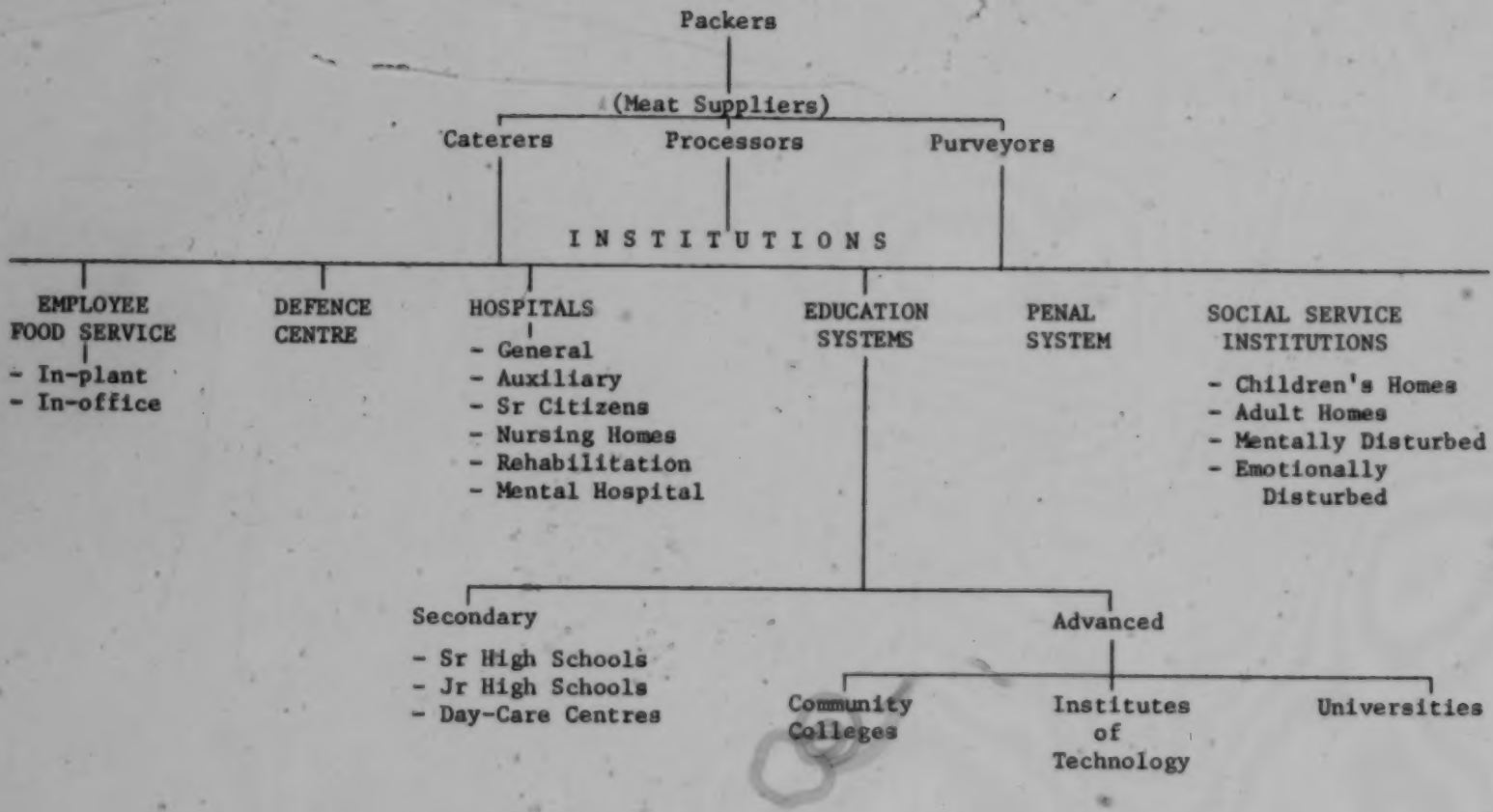


FIGURE 3.1: A Schematic Diagram of the Classification and Extent of the Institutional Market Considered.

together. It is assumed that meats or beef demanded in these institutions are used for similar purposes--for food and for instructional purposes. Hence universities and colleges form an institution type. In Alberta in 1973, 54,000 students enrolled in this category of institution (Table 3.3).

(b) Institutions which serve mainly hot lunches every day and in which food preparation can be used as an educational experience for students or children are grouped together. In this category are schools (elementary grade and high) and day-care centres. In 1975, 421,785 students were enrolled in Alberta elementary grade and high schools[1] while 14 government-owned day-care centres operated in the City of Edmonton in 1977.[2]

(c) Health requirements are an important consideration in classifying hospitals and health centres. It is assumed that meats demanded by general and auxiliary hospitals for patients who are hospitalized and under treatment would be desired more for nutritional purposes than for physical growth and strength or for instructional purposes. Similarly, nursing homes or homes for the aged would require similar health foods for their old, weak, and disabled people. Hence health centres are comprised of general hospitals, auxiliary and treatment hospitals, and nursing homes or homes for the aged. In Alberta, as of December 31, 1975, there were 11,984 beds in active treatment

---

[1] Alberta Education, The Seventy-First Annual Report, April 1, 1975 - March 31, 1976 (Edmonton: Government of Alberta, 1977), p. 158.

[2] Mimeograph list prepared by Edmonton Social Services, Canadian National Railway Tower, Edmonton, Alberta, 1977.

TABLE 3.3

ALBERTA EDUCATIONAL INSTITUTIONS

Education	Enrolment	Meal Requirement
Universities and Colleges[1]	30,000	30,000
Technical Institutes[2]	16,000	16,000
Vocational Colleges[3]	7,000	7,000
A.P.I.T.C.[4]	1,000	1,000
Total	54,000	54,000

[1] Includes colleges affiliated and recognized as university level education, such as College St. Jean in Edmonton.

[2] N.A.I.T. and S.A.I.T. apprenticeship division figure of 8,000 was included. The courses offered ranged from 6-8 weeks. The number of students enrolled did not exceed 1,000 at any one time.

[3] Includes agricultural colleges and vocational centres.

[4] Alberta Petroleum Industry Training Centre (A.P.I.T.C.).

[5] Based on 1973 Annual Report for Advanced Education. This figure represents one meal per day, per student (breakfast and dinner are expected to be eaten at home; figures for teaching staff and service staff were not available).

Source: W. W. Lowrie, Preliminary Report on the Proposed Alberta Food Corporation (Edmonton, Alberta: Agriculture Statistics Branch, Alberta Agriculture, 1976), p. 21.

general hospitals (Table 3.4); 2,756 beds in auxiliary hospitals (Table 3.5); and a total of 6,869 beds in nursing homes.[1]

(d) Social and welfare policies of the government are also considered in classifying institutions. These government institutions include those that harbour either the deformed or the handicapped (but not the sick), or the physically able-bodied but old--the senior citizens. Also included in this category are the children's homes and institutions, and the preventive social services centres. In Alberta, the total number of children in homes and institutions as of March 31, 1975, was 10,798, while adult care centres housed 1,511 people.[2]

(e) Some institutions perform public service for the nation such as Defence Centres--airforce and military bases. Other categories include penal institutions, which housed 1,690 inmates in 1973 in Alberta (Table 3.6), and industrial and government cafeterias which provide food services for in-plant and in-office employees.

Limitations of Methodological Procedure

There are certain limitations to the methodology used in this study. There is the danger of bias entering into sample results with personal interviews.[3] Bias may enter into the sample results because

---

[1] Alberta Hospital Services Commission, Annual Report for the Year Ended December 31, 1975 (Edmonton, Alberta: 1975), p. 38.

[2] Alberta Social Services and Community Health, Annual Report 1974-75 (Edmonton, Alberta: Alberta Social Services and Community Health, 1975), pp. 36-37.

[3] Bias may enter into other sampling techniques as well, but personal interviews lend themselves more readily to subconscious bias.

TABLE 3.4

GENERAL HOSPITALS AT DECEMBER 31, 1975,

BY GROUP SIZE

Group Size: Adult and Children Beds	Hospitals		Beds	
	Number	Percentage	Number	Percentage
1 - 24	29	22.5	441	3.7
25 - 49	52	40.3	1,747	14.6
50 - 99	28	21.7	1.719	14.3
100 - 299	11	8.5	1,778	14.8
300 and over	9	7.0	6,299	52.6
Totals	129	100.0	11,984	100.0

Source: Alberta Hospital Services Commission, Annual Report for the Year Ended December 31st, 1975 (Edmonton, Alberta: Alberta Hospital Services Commission, 1975), p. 32.

TABLE 3.5

ALBERTA AUXILIARY HOSPITALS BY GROUP SIZE

AT DECEMBER 31, 1975

Group Size	Number of Hospitals	Percentage of Hospitals	Number of Beds	Percentage of Beds
1 - 49	3	10.3	156	5.7
50 - 99	14	48.3	702	25.5
100	6	20.7	600	21.7
Over 100	6	20.7	1,298	47.1
Totals	29	100.0	2,756	100.0

Source: Alberta Hospital Services Commission, Annual Report for the Year Ended December 31st, 1975 (Edmonton, Alberta: Alberta Hospital Services Commission, 1975), p. 35.

TABLE 3.6

ALBERTA PENAL INSTITUTIONS

Penal System	Capacity	Male	Female	Total	Meal Requirement per Day
Federal Penitentiary[1]	467	480	0	480	1,400
Provincial Jail	1,698	1,165	45	1,210	3,600
					5,000

[1] Drumheller is the only federal penitentiary in Alberta.

Note: Based on 1973 figures released by Statistics Canada.

Source: W. W. Lowrie, Preliminary Report on the Proposed Alberta Food Corporation (Edmonton, Alberta: Agriculture Statistics Branch, Alberta Agriculture, 1976), p. 23.

of some conscious or unconscious prejudice on the part of the respondents or on the part of those making the survey. It is therefore difficult to determine if all data reported by respondents are accurate. This is due to the fact that similar data have never before been collected and some answers on the part of the respondent might be estimates. Lack of detailed or up-to-date and complete records makes estimates necessary for the "exact" price per pound of meats of similar products in some instances. Imputed average prices per pound do not appear to be in line with the exact price per pound of similar products. Also, the data were collected during a relatively short period (4 months) so it was impossible to analyze or correct for seasonal price variations.

Even though bias, whether conscious or unconscious, can never be eliminated altogether, an attempt was made to minimize it through careful construction of the questionnaire. Conducting a pilot test before the questionnaires were used helped considerably to test out question structure and the ease with which questions could be answered by the respondent. Also, the use of a questionnaire in a personal interview prevented the interviewer from wrongfully stating questions and confusing the respondent.

Another area of qualification lies in the scope of the survey area which relates to a specific area of Alberta only (Edmonton and suburbs) and which does not take into consideration other parts of the province or other provinces in Canada, particularly the Eastern and Pacific provinces which constitute the strong markets for Alberta and imported meats. Generalization of the results obtainable may thus not be tenable across institutions in the country. However, it is nonetheless

appropriate to suggest that the results obtainable on the study have sufficient merit and potential for understanding institutional purchasing characteristics for meats in Alberta, and to constitute a base for further studies. The need for further studies is occasioned by the fact that this study represents a pioneering effort in this type of market in Canada, and therefore there is a need to verify if all data reported by correspondents are accurate.

Method Used for Analysis of Data

The method used in this study is essentially the self-report descriptive survey type, although statistical empiricisms are used as tools to justify observed phenomena where necessary. The major analytical tools used include computing arithmetic means and percentages. Also used are chi square analyses, contingency table correlation techniques, rank order comparisons, and analysis of variance.

To determine the poundage of meat used, the quantities of meats purchased for each meat type were totalled. Also the dollar value of purchases of each meat type and selected individual meat products were calculated. The most frequently used statistical techniques, however, are the analysis of variance and the chi square statistic.

Analysis of Variance (ANOVA)

The two-way classification of the randomized block design (ANOVA) is used to test the null hypothesis that the quantity of meat bought by each institution is not dependent on the type of institution or the type of meat (Chapter VI).

ANOVA is a statistic that allows a partition of the total variance S^2 in a group of scores or observations into some different identifiable sources such as: (a) different experimental treatments; (b) different identifiable subject characteristics; and (c) unidentifiable subject characteristics.[1] For example, one might feel that the quantity of meat bought by an institution is dependent on the type of meat, on the type of institution, or on some other unidentifiable factor.

The Model

The mathematical statement of the two-way classification randomised block design (ANOVA) is stated as follows:[2]

$$X_{ij} = \mu + \alpha_i + \beta_j + \xi_{ij}, \quad i = 1, \ldots, a; \quad j = 1, \ldots, b;$$

$$\xi_{ij} = N(0, \sigma); \text{ and}$$

$$\Sigma\alpha_i = \Sigma\beta_j = 0$$

The model says that each observation X_{ij} (which in this study represents the quantity of meat--either beef, veal, lamb, pork, or poultry--bought by any institution) is due to the sum of four components:

1. μ, which is the general or population mean;
2. α_i, which is variation due to the effect of treatment i, i.e., the type of institution which buys the meat;

---

[1] Eleanor Walker Willemsen, Understanding Statistical Reasoning (San Francisco: W. H. Freeman and Co., 1974), pp. 88-98.

[2] G. W. Snedecor, Statistical Methods Applied to Experiments in Agriculture and Biology (Ames, Iowa: Iowa State College Press, 5th Edition, 1956), p. 296.

3. βj, which is the variation due to the effect of block j, or the type of meat; and
4. ξij, which is a residual or error effect.

The ξij is assumed to be independent from observation to observation and to be normally distributed with mean 0 and standard deviation σ. The sum of the treatment effect (type of institution), $\Sigma \alpha i$, and that of the block effect (type of meat), $\Sigma \beta j$, are assumed to be zero. Hence, $\Sigma \alpha i = \Sigma \beta j = 0$.

The Analysis of Variance Table

In the same way an observation is made up of many parts, an analysis of variance table partitions the sum of squares of the observations and their degrees of freedom in the following pattern: one is attributable to the effect of the type of institution, one is attributable to the effect of the type of meat, and the last is attributable to the residual or error sum of squares. A hypothetical table of ANOVA is shown below.[1]

---

[1] For a clear understanding of how the variables in the table are computed, see W. G. Cochran and G. M. Cox, Experimental Designs (New York: John Wiley and Sons, Inc., 2nd Edition, 1957), pp. 106-108.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F-Test
Treatments (Types of Institution)	a - 1	A	$\frac{A}{a-1}$	$\frac{A/a-1}{D/(a-1)(b-1)}$
Blocks (Types of Meats)	b - 1	B	$\frac{B}{b-1}$	$\frac{B/b-1}{D/(a-1)(b-1)}$
Error	(a-1)(b-1)	D	$\frac{D}{(a-1)(b-1)}$	
Total	ab - 1	A + B + D		

The ANOVA Design Used

The randomized block design is used in this study because it handles situations where there are missing values or zero quantities of meats purchased without producing unbiased estimates of treatment, block, and error effects. Also, if the experimental error variance is larger for some treatments (types of institutions) than for others, an unbiased error for testing any specific combination of the treatment means can still be obtained by the use of this design.[1]

The Chi-Square Statistic

The chi-square test is used in this study whenever our interest is to determine the presence or absence of a relationship between a number of attributes or to determine the goodness of fit where there

[1] Ibid., pp. 106-107.

are frequency response data. Kohout indicates that the statistic is appropriate when we encounter problems in which our interest is in the number of subjects, objects, or measurements falling in each of various categories, i.e., the chi-square test is only applied to frequency data.[1]

The model: The chi-square model in an RxK contingency table is stated by Edwards as follows:[2]

$$\text{Chi-Square} \quad \chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{k} \frac{(Nij - Nij^1)^2}{Nij^1},$$

where Nij = the observed number of observations in the i^{th} category or row under j^{th} column.

Nij^1 = the expected number of observations in the i^{th} category or row under j^{th} column.

The test follows a chi-square distribution with (c-1) (r-1) degrees of freedom, where c is the number of columns in the table and r, the number of rows.

The chi-square statistic is used in most of the tests conducted in this study. In the cases where there are many zero cells in the frequency table and the number of observations are large, some of the categories in the contingency table are combined in order to moderate the value of χ^2. Kohout suggested combining categories in the

---

[1] Frank J. Kohout, Statistics for Social Sciences (New York: John Wiley and Sons, Inc., 1974), pp. 400-403.

[2] Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Holt, Rinehart and Winston, 1962), pp. 366-382.

contingency table when the number of observations and the degree of freedom are large and the minute expected frequencies would contribute little to the efficiency of our estimate.[1] This would allow one to avoid making type I[2] errors more often than the stated level of α.

Specific Treatment of the Data for Each Objective

Objective 1

The first objective is to describe survey responses regarding meat buying strategies employed by institutional meat buyers in countervailing the powers and tactics of meat suppliers in terms of price and non-price policies.

The data needed for the objective are the frequency responses of institutions with regards to the following questions asked during the survey.

1. What are the meat procurement methods used in securing foods?
2. What are the guidelines used by suppliers for setting prices?
3. What are the non-price strategies used by the institutions and the meat suppliers alike to secure advantages from each other in negotiation?

---

[1] Frank J. Kohout, op. cit., pp. 400-401.

[2] A Type I error is the probability of rejecting a null hypothesis when it is true.

Treatment of the data. Each institution was asked to rank the suggested answers to each question above according to the order of importance. The responses given by the institutions were cross-tabulated in a frequency table after each institution had ranked the suggested answers or reasons. A hypothetical frequency table of the responses for each question is shown below in Appendices E1 to E5.

A chi-square test was conducted on each of the response tables to justify the observed phenomena.

Objective 2

The second objective of this study is to develop and interpret information on the supply sources and flows of meats to institutions and the economic characteristics of the establishments which supply the meats.

The data needed for this objective are:

1. the quantities of each type of meat bought from the suppliers by each firm;
2. the names of the firms supplying each institution;
3. the original sources from which the firms buy their meats;
4. the quantities or percentages of the meats passing through the firms to the institutions that come from Alberta, other Canadian provinces, and from foreign sources;
5. the intermediaries in the market channels between the packers and the institutions.

Treatment of the data. The quantities of the different types of meats supplied by each supplier are totalled, the average proportions originating from Alberta, other Canadian provinces, and foreign sources

are determined, and the market channels between the major suppliers of each type of meat and the institutions are drawn up. A hypothetical channel for the flow of meats is shown in Appendix E6. One such distribution channel is drawn for beef, veal, lamb, pork, and poultry.

Objective 3

The purpose of the third objective is to determine the type, quantity, and the value of meats used by institutional foodservice operators.

The data needed for this objective are the quantity of meat that goes to the institutions in a month, the different types of meat cuts, and their prices.

Treatment of the data. The quantities of each type of meat bought by each institution are determined. These quantities are aggregated for each type of institution, and the percentages of total meat accounted for by each type of meat are calculated. The same type of calculation is used to determine the value estimates and proportions for the different types of meats. A hypothetical table showing estimated quantity of meats used in surveyed institutions is shown in Appendix E7. A similar type of table is made for the estimated values of meats used in a month.

Transformation of data. Due to the extreme variation within institutions with regards to the quantity of meats bought, it was obvious that the original data on the quantities of meats bought are not normally distributed (Appendix B2). This means that the estimated error variances from the data will not be constant over all observations. The assumption

of homogeneous variance is therefore violated.[1]

Since the violation of this assumption is likely to produce a loss of efficiency in estimation of treatment effects and block effects and, therefore, a corresponding loss of power in the F-test, a transformation of the data was made before ANOVA test was performed. A transformation of the original data was made by dividing the quantity of each type of meat bought by each institution by the number of meat plates served in a day by the corresponding institution. The transformation produces a table showing the quantity of each type of meat bought in a month per dinner plate (Appendix B3). As a result of the transformation, the extreme values in the original data, the ranges, means, and the coefficients of variability are reduced.

The transformed table of quantity estimates was subjected to an analysis of variance test to find out whether the type of institution or the type of meat does have an influence in determining the quantity of each meat type bought by each institution. The two-way analysis of variance, randomized block design, was used.

Objective 4

The fourth objective is to identify and evaluate utilization patterns and interpret factors affecting procurement and use of various market forms of meats.

---

[1] The consequences of failure in the assumptions and the remedial steps to be taken can be found in: W. G. Cochran, "Some Consequences When the Assumptions for the Analysis of Variance are Not Satisfied," Biometrics, Vol. 3, 1947, pp. 22-38; and M. S. Bartlett, "The Use of Transformations," Biometrics, Vol. 3, 1947, pp. 39-52.

The data needed for the objective are the frequency responses of institutions with regards to the following questions:

1. What factors are considered for buying most frequently bought meat cuts?
2. What factors or reasons account for the use of convenience foods or catered foods (for the institutions that use them)?
3. What factors account for the non-use of convenience foods (for the institutions who like to cook their own foods)?

Treatment of data: The institutions were asked to rank the factors given for each question according to how important they thought each factor was. The rankings given by the institutions were then summarized in frequency tables. Three hypothetical frequency tables, one for each question, are provided in Appendices E8 to E10. Chi-square tests were applied to the frequency tables to justify the goodness of the rankings provided by the institutions.

CHAPTER IV

MEAT PURCHASING METHODS AND STRATEGIES

Introduction

The structural pattern of participants in a marketing system has often dictated merchandizing and purchasing procedures. Large and small firms compete with each other to obtain a share of a market, while buyers, large and small alike, strive to buy their products in the most economic and cost-reducing way. Exchange behaviour in the institutional market is not exempt from this type of market conduct.

In this chapter an attempt is made to investigate the meat procurement methods used in institutional food operations. Attention is directed particularly to investigating strategies used by institutional consumer-buyers and their meat suppliers in a merchandizing procedure in terms of price and non-price policies. Also, the relationship between the size of an institution and its method of purchasing meats is investigated since it was assumed that differences in the size of institutions might cause variation in procuring methods.

The analysis in the chapter is undertaken in two parts. Part one deals with meat procurement methods used in institutions. Essentially it investigates the extent to which informal or spot (salesmen) buying, semi-formal (negotiated) buying, and formal (bid)

buying were used in institutions.[1] Section two discusses the strategies used in meat merchandizing. In particular, it describes meat buying strategies employed by institutional consumer-buyers in countervailing the powers and tactics of meat suppliers.

Meat Procurement Methods

The several food procurement methods currently used in food operations have already been discussed in Chapter II and were illustrated in Figure 2.2. The diagram in Figure 2.2 is a general conceptual schema and some methods shown therein may be negligible or non-existent within the framework of the institutional meat market under consideration. However, the diagram serves to provide a clear background to the type of procurement methods used in Alberta institutions.

Spot Buying

Twenty-four of the 63 institutions surveyed, or 38 per cent, used this method of purchasing meats, although all of these institutions are the small size institutions, i.e., those which serve 399 or less meat plates per day (Table 4.1). Most of these buyers rarely purchase from many suppliers at a time, and each tends to maintain customer loyalty with the supplier. Friese[2] said that in

---

[1] These methods of buying are discussed in the section immediately following. A description of three types of purchasing is also available in Kotschevar, Quantity Food Purchasing (New York: John Wiley and Sons, 2nd Edition, 1975), pp. 32-33.

[2] J. C. Friese, "Professional Purchasing Techniques--School and College," Food Management, Vol. 6, No. 7, 1970, pp. 16-20.

TABLE 4.1

MEAT PURCHASING METHODS USED BY INSTITUTIONS

Size[1] of Institution	Purchasing by Negotiation	Purchasing by Competitive Bids	Spot Buying	Negotiation and Tender Bids
0 - 199	4	3	20	1
200 - 399	3	4	4	1
400 - 799	8	4	0	0
800 and over	3	7	0	1
Total	18	18	24	3

[1] Size is the average number of meat meals served per day per institution.

the United States in 1970, this method was used by almost 90 per cent of institutional consumer-buyers.

Competitive Bid Buying

Table 4.1 also shows the number of institutions buying by tender and bid. Eighteen institutions used this method of buying and, of these, 11 fell within the large size categories, i.e., those which serve 400 meals or over every day. Thus, large institutions tend to use this type of purchasing more than smaller ones. The reason given by the large institutions was that they were able to strengthen their purchasing power in buying at lower prices from the suppliers. Thus from the standpoint of the mechanics of operation, tender and bid buying has the potential for a high degree of pricing efficiency. Since almost all institutional buyers and their suppliers have a working knowledge of the market, the degree of competition in this respect has a direct bearing on price level of offers made.

Institutional meat buyers using the tender and bid method said that they usually awarded their contracts on a winner-take-all basis. In some cases, however, said one institutional buyer, allowance is made for a supplier's superior product or reputation for completing contracts. Sometimes, also, government institutional buyers did award contracts to the young, less established firms to promote more competition in the industry.[1]

---

[1] A discussion with one anonymous institutional buyer.

Negotiated Buying

Eighteen of the 63 institutions found advantages in using this method of buying and, like the tender and bid buying, 11 of the 18 were the large size institutions.

It therefore appears that there is a correlation between the size of an institution and the method of meat procurement used. Large institutions tend to use the tender and bid and the negotiated buying methods, while the small ones use the spot method of buying. Some institutions, small or large, however, use a mixture of the three types of purchasing.

The hypothesis that there is no relationship between the size of an institution and the procurement method used for meat purchases was tested. A chi-square test revealed that there is a significant difference between the sizes of institutions and the procurement pattern used by different institutions. In fact, the chi-square becomes significant at 0.5 per cent level, indicating a very significant difference. The hypothesis was therefore rejected, and we conclude that large institutions tend to use the competitive bid and the negotiated buying methods, while small institutions tend to use the spot buying method.

Contractual Arrangements in Meat Purchasing

Meat purchases made via tender and bid and negotiation are usually backed by contracts to supply the items. Thirty-nine institutions used either or both tender and bid and negotiated methods of buying meats, and contract arrangements used ranged from weekly contracts to six month contracts (Table 4.2). The most commonly used contract arrangement is the monthly duration with 26 institutions having a preference

TABLE 4.2

CONTRACT PERIOD AND NUMBER OF INSTITUTIONS USING EACH PERIOD

Type of Institution	Contract Periods					Total Reporting
	Weekly	Monthly	2 Months	3 Months	6 Months	
	Institutions Reporting for Each Period					
Hospitals and Nursing Homes	5	17		2		24
Universities and Colleges	1	3			1	5
Schools and Day Care Centres	1			1		2
Welfare Homes and Institutions		3	1			4
Penal Institutions		1				11
Defence Centres		2				2
In-plant/In-office Cafeteria	1					1
Total	8	26	1	3	1	39

for it. This is followed by the weekly contract, with 8 institutions having preferences for this time period, and 3 institutions using the 3 month period.

The reason given for the use of these relatively short term contracts is that it affords both buyers and suppliers to be adaptable or flexible to market price conditions so that both could minimize their losses. Institutions have weekly or monthly quotations of prices from suppliers of meat cuts and each supplier would like his price to meet competition so as not to lose his customer. Thus suppliers prefer long term contracts only if it is observed that prices will fall, not if they will rise. On the other hand, institutional buyers like long term contracts only if it is observed that meat prices will rise. Therefore, this trade-off of interests between institutions and suppliers results in short term contracts designed to protect institutions from over-priced meats and firms from sustaihing losses.

Delivery Periods

The frequency with which deliveries are made depends mainly on the type of institution. The frequency of delivery of meats is given in Table 4.3. Since fresh meats require refrigeration and are perishable, they must be delivered frequently. Frequency of delivery ranges from daily delivery to every two months, depending upon the institution. About 57 per cent of the institutions (36 of 63) require deliveries once a week, 17 per cent (11 institutions) twice a week, and about 13 per cent (8 institutions) three times a week. Many smaller hospitals which lack large refrigerated storage space indicate

TABLE 4.3

MEAT DELIVERY PERIODS AND NUMBER OF INSTITUTIONS ACCEPTING AT EACH PERIOD

Type of Institution	Delivery Periods								
	Weekly	Twice Weekly	Daily	Every 6 Weeks	Every 2 Weeks	Monthly	Anytime Required	2 Months	3 Months
	Number of Institutions Accepting								
Hospitals and Nursing Homes	21	3	1			2		1	
Universities and Colleges	3	1	1						
Schools and Day Care Centres	4	3			1	2			
Welfare Homes and Institutions	4	1		1		4	1	1	1
Penal Institutions	1	1							
Defence Centres	1								
In-plant/In-office Cafeterias	2	2							
Total	36	11	2	1	1	8	1	2	1

that they have deliveries made daily or at any time. The same situation occurs with those that desire fresh products almost daily. The larger institutions which buy carcasses or portioned cuts and have large refrigerated storage space reported having longer delivery periods--one to three months. In general, however, the weekly delivery period appears to be predominant among the institutions.

Competition and Price Policy of Suppliers

Institutional prices for individual meat cuts vary and follow the pattern of fluctuation observed at the retail level. But though there is a pattern of price differentials among the various cuts, the respondents stated that the major determinants of asking price in the institutional market are the supply of the meat items demanded by institutions, and the desire of suppliers to make some margin over costs. These two factors are ranked number 1 by the surveyed suppliers (Table 4.4).

The supply of the meat items demanded by institutions becomes an important price-asking factor because the quantities of each type of meat or cut demanded by each institution do not significantly change, at least in the short run,[1] owing to rigidities in menus, tastes, and sizes of institutions. Similarly, packing plants have little control over supply in the short-run and many products are produced under

---

[1] The short-run from the institutions' point of view could be as long as any institution's buying policy affects any changes that could lead to an increase in the amount of meats demanded by the institution. The length of the run is a policy variable, determined largely by changes in tastes and population, and it could be two or more years long.

TABLE 4.4

FIRMS' RANKING OF GUIDELINES FOR ESTABLISHING PRICES[1]

Guidelines for Price Setting	Ranks[2] 1	2	3	Weighted[3] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	Firms Reporting				
Cost plus margin	2	1	2	1.66	1
Supply of meats demanded	2	1	2	1.66	1
Pricing to meet competition	1	3	1	1.83	2

[1] Based on responses of 5 suppliers.

[2] The ranks, and grand ranking by all institutions, are in descending order of magnitude, i.e., the lowest number represents the highest rank, the highest number the lowest rank.

[3] Weighted average of the ranks is computed as $\Gamma\omega = \frac{\Sigma rx}{\Sigma x}$,

where r = ranks, and
x = institutions reporting.

conditions of joint costs--such costs as plants and fixtures, heat and power, which cannot be assigned to any one product. Thus, to be economically operational, firms like to set their prices to cover these total costs. Winter (1969) observed this pricing behaviour among packers and processors when he said: "There is no history in the meat packing industry of pricing individual cuts on the basis of cost. The variation in selling prices is extreme and rather difficult to explain."[1]

Supplying firms surveyed thus indicated that, owing to this kind of operational condition, they had to handle various meat products at very low margins, even sometimes at below cost, to meet competition. Pricing below cost is not often done, however, because even the big packers indicated that they were always cautious not to use any predatory pricing tactics on independents, because predatory price cutting tended to move quickly through the industry as institutional buyers relay price information to competitive salesmen; other firms would therefore retaliate by reducing prices to their customers. Such behaviour will be unhealthy for the meat packing industry and may provoke anti-trust litigations.

Competitive tactics used by suppliers to promote sales and to capture or retain their market shares are discussed in the following section. Also, strategies used by suppliers to counteract the buying powers of large institutions and vice versa are discussed. Quite often these strategies are non-price tactics. However, the smaller

---

[1] George R. Winter, Conduct in Canadian Food Marketing (Ottawa: Agricultural Economics Research Council of Canada, 1969), p. 128.

packers and processors surveyed vigorously complained about the coercive pricing of the big packers and the latter's gradual erosion of their institutional market sales.

Strategies Used by Sellers Against Buyers and Vice Versa

Strategies of sellers against buyers are identical to the aforementioned inter-firm competitive strategies except that sellers' merchandizing strategies are in response to buyers' behaviour in the market setting. That is, the strategies are manoeuvres adopted when the behaviour of the buyers is taken into consideration. Similarly, buyers' strategies are built on information regarding the sales behaviour of the suppliers. The respondents indicated that the essence of the market relationship between the two parties is some combination of price and non-price conditions of sale. The seller seeks to maximize the price received and minimize the non-price conditions given by the buyer, while the buyer seeks the opposite result. The purpose of this section is to review the tools sellers use to discourage price and non-price concessions asked by buyers and vice versa. These are negotiative strategies.

Sellers' Strategies in Negotiation

The various tools used by sellers are examined in Table 4.5. The table shows suggested negotiative strategies used by suppliers. The strategies are firms' established brand names, special product processing, firm's size and service provisions. In order to emphasize

TABLE 4.5

FREQUENCY DISTRIBUTION OF THE EXTENT TO WHICH SELLERS BELIEVED NEGOTIATIVE STRATEGIES WERE EMPLOYED IN NEGOTIATION[1]

Negotiative Strategies	Ranks[2]				Weighted[3] Average of Ranks	Grand Ranking All Institutions
	1	2	3	4 or no rank		
	Firms Reporting					
Firm's relative size vs. buyer's	0	0	0	5	4	4
Special product processing	3	2	0	0	1.4	1
Established brand name	2	2	1	0	1.8	2
Quality and service	1	1	1	2	3	3

[1] Based on responses of 5 firms that supply meats to institutions.

[2] The ranks, and grand ranking by all institutions, are in descending order of magnitude, i.e., the lowest number represents the highest rank, the highest number, the lowest rank.

[3] Weighted average of the ranks is computed as $\Gamma\omega = \frac{\Sigma rx}{\Sigma x}$, where

r = ranks, and
x = institutions reporting.

the relative emphasis placed on each strategy, the sellers surveyed were asked to rank the strategies according to their perception of use in negotiation.

Special product processing or product differentiation was ranked number 1, and established brand names was ranked number 2. The surveyed firms indicated that these strategies are most frequently used as negotiative strategies by sellers. Sellers usually charge higher prices for slightly differentiated products. Examples are also found in different meat cuts found in the retail market. For example, rib steaks are more expensive than ground meats.

Similar examples in non-food industries show that established brand names command higher volume sales at higher prices (for example, in the electrical industries). Japanese electronic equipment such as stereos and cameras made by Akai and Sanyo are more admired brand names among electronic buyers than Pioneer and Bell and Howell.[1]

Sellers' Sales Promotion Tactics

Volume selling at lower prices is usually practised by large firms. Oligopolistic sellers sometimes cut prices in order to land an unusually large order, especially when they have excess capacity and demand is slack.[2] This tactic is used by institutional meat suppliers (Table 4.6). Of the four promotional strategies suggested,

---

[1] Discussion with an electronics dealer--Woodwards' Store, Southgate Shopping Centre, Edmonton, October 17, 1977.

[2] F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago, Ill.: Rand McNally College Publishing Company, 1970), p. 246.

TABLE 4.6

FREQUENCY DISTRIBUTION OF THE EXTENT TO WHICH FIRMS BELIEVED THESE SALES PROMOTION STRATEGIES WERE USED[1]

Sales Promotion Strategies	Ranks[2]				Weighted[3] Average of Ranks	Grand Ranking All Institutions
	1	2	3	4 or no rank		
	Institutions Reporting					
Offer of lower price	2	1	1	1	2.2	1
Volume (discount) selling	1	2	0	2	2.6	2
Rebate to customers	0	0	0	5	4.0	4
Return privileges	1	0	1	3	3.2	3

[1] Based on responses of 5 firms that supply meats to institutions.

[2] The ranks, and grand ranking by all institutions, are in descending order of magnitude, i.e., the lowest number represents the highest rank, the highest number the lowest rank.

[3] Weighted average of the ranks is computed as $\Gamma\omega = \frac{\Sigma rx}{\Sigma x}$, where

r = ranks, and
x = institutions reporting.

suppliers stated that they believed that actual offer of lower price was the most frequently used tactic to woo customers or promote sales. Volume selling at discount prices came second, while return privileges was third. In the non-food industry, Galbraith cites the use of selling at discount prices by the steel mills to make large sales to the auto industries.[1]

An alternative way in which a seller can negotiate larger sales is by offering a buyer different quantities, but offering him each successive quantity at a lower price. In Figure 2.5 (Chapter II) such an offer is represented geometrically by the curve WVUT.

Buyers' Countervailing Strategies

Sellers are not the only members of the market setting who make plans built on expected behaviour of others. Buyers also undertake the development and employment of strategies. These strategies are directed at reduction of the price condition of sale and increase in the non-price aspects of the purchase-sales process.[2] In Chapter VII it is pointed out that institutional buyers state that they put emphasis on uniform quality of products, dependable service, and lower price in choosing and retaining their suppliers. Below are some of the strategies used to secure price and non-price concessions.

Buyers' Strategies for Lower Price

Small buyers restrain the pricing actions of oligopolists by

---

[1] J. K. Galbraith, op. cit., p. 113.

[2] E. V. Araullo, op. cit., p. 117.

concentrating their orders into big lumps in a centralized purchasing system, dangling the temptation before each seller and expecting and encouraging a break from the established price structure.[1] Alberta Government Purchasing Agency (AGPA) uses this method to buy meats for its multifarious welfare homes. This tactic has also been employed on occasions by A and P Company of America to extract price reductions from grocery manufacturers.[2] Also, the University of Northern Colorado's director of food services used this tactic to buy 15,000 pounds of beef shank at 66 cents per pound instead of 96 cents per pound.[3]

Scherer also indicated that large buyers also play one seller off against the others to elicit price concessions.[4] Large institutions surveyed use this method by buying from many suppliers. Also, each of the major college food buyers (The Big Ten) in the United States spread their business around to meat packers and food suppliers so that they can threaten to shift, or actually shift, their distribution of orders in favour of the supplier who offers more attractive terms.[5]

Smaller independent hospitals have also recently started integrating their purchases into cooperative buying, and concentrating

---

[1] F. M. Scherer, op. cit., p. 245.

[2] Ibid.

[3] "College Learns to Buy Wise," Institutions/Volume Feeding, Vol. 75, Oct. 15, 1974, p. 89.

[4] F. M. Scherer, op. cit., p. 246.

[5] "The Big 10 Pros Tackle the Times," Institutions/Volume Feeding, Vol. 73, No. 3, August 1, 1973, pp. 23-28.

their business as a unit with one seller such that the seller cannot (or does not like to) lose his account.[1] The University of Alberta in Conjunction with College St. Jean, the University of Alberta Hospital in conjunction with Alberta Research Council, Aberhart-W. W. Cross-Veterans Homes, and the Wetaskiwin General-Auxiliary Hospitals-Nursing Home use this strategy in food purchasing.

Araullo[2] cited the use of this strategy by many hospitals at substantial savings to the institutions. Similarly, food purchases for many small independent hospitals in Southern California have been centralized under one buying authority to elicit some savings.[3]

Buyers' Negotiative Strategies

The use of non-price incentives as a tool of negotiation is also used by institutional buyers. That is, institutional consumer-buyers state that they tend to exercise their power by emphasizing better product quality, dependable service, prompt delivery, good packaging and return privileges.

Gnauch gave an example of use of these non-price incentive strategies by the seed and pesticide industries with the firms they buy from.[4] Also, the director of food services at the University of

---

[1] H. Berberoglu, op. cit., p. 11.

[2] E. V. Araullo, op. cit., p. 15.

[3] "Food Management," Hospital/Nursing Home Case Book Number 33030, Vol. 10, No. 10, Oct. 1975.

[4] B. G. Gnauch, "An Economic Analysis of Market Conduct in Five Agricultural Input Industries," Unpublished Ph.D. Thesis, University of Minnesota, Department of Agricultural Economics, 1968, p. 183.

Northern Colorado said: "We use spec sheets as part of an agreement form for weekly bids. . . . The purveyor has to live up to the spec or take it back. We don't back down on this."[1]

Overall, with regards to public brands, i.e., standardized meat products, large institutional buyers will tend to put greater emphasis on price, but will do so as well on non-price factors when unique proprietary brands are supplied. Under the latter condition, therefore, suppliers will have an advantage in bargaining power.[2]

---

[1] "Food Purchasing--College Learns to Buy Wise," Institutions/ Volume Feeding, Vol. 75, Oct. 15, 1974, p. 89.

[2] B. G. Gnauch, op. cit., p. 63.

CHAPTER V

SUPPLY SOURCES AND DISTRIBUTION CHANNELS FOR MEATS USED IN INSTITUTIONS

One of the objectives of this study is to develop and interpret information on the supply sources of meats to institutions and the economic characteristics of the establishments which supply the meats. In this chapter an attempt is made to achieve this goal by directing attention towards the following specific objectives:

(a) To determine what percentage of total institutional meat purchases was produced in Alberta.

(b) To outline, and quantify where possible, the marketing channels for meats flowing into the institutional market.

(c) To document and describe the entrance of imported meats into the institutional market.

The analysis included in this chapter was undertaken in three parts. The first part outlined the market channels for each type of meat. This was followed by a section dealing with imported meats flowing into the institutional market. The third part described the economic characteristics of the firms that supplied meats to the institutions.

Distribution Channels for Meats Flowing into the Institutional Market

The marketing system for meats flowing into the institutional market involved a somewhat complex array of channels. The channels for this market were considered to begin at the geographic origin of the livestock that produced the meats, continue through intermediate channels such as the packing plants, the processing firms, purveyors, and distributors, and end at the institutional consumer. To the extent that data were available, an attempt was made to quantify the total amount of each type of meat supplied by each firm (Table 5.1).[1] However, it was difficult to determine actual quantities representing the size and volume of the flows in each channel because data were not available in this form. Many of the reports in this chapter dealt with privately and publicly owned firms who were reluctant to divulge information, even when such information was available. Thus, some firms were often reluctant to name their customers and the proportion of their meats going to each, so that the channels were often impossible to quantify.

Figures 5.1 through 5.5 illustrate distribution channels for the different types of meats. Three main market channel alternatives were used by institutional meat suppliers: (1) direct sales by packers to institutions, (2) indirect sales via processors and distributors to the institutions, and (3) indirect sales by packers to institutions through

---

[1] The quantities of each type of meat supplied by each firm were obtained from the invoices of the institutions.

TABLE 5.1

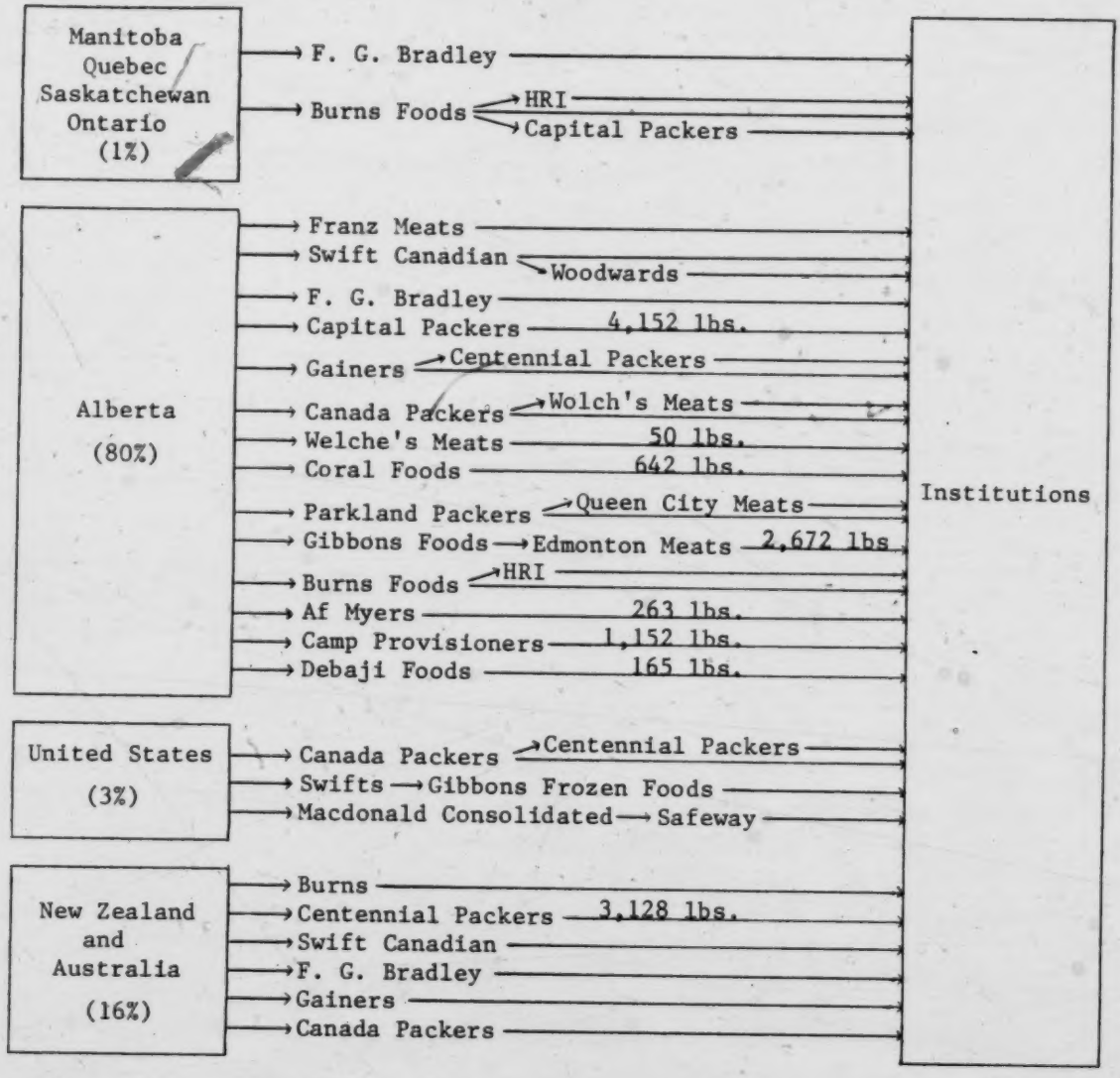
MARKET SHARES OF FIRMS SUPPLYING MEATS TO INSTITUTIONS : ESTIMATED QUANTITIES FOR A MONTH'S SUPPLY, AS RECEIVED BY 63 INSTITUTIONS

Supplying Firms	Beef	Veal	Pork	Lamb	Poultry	Total	Per Cent of Total or Firm's Share
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
1. Swift Canadian	18,235	1,174	9,725	376	8,626	38,135	20.98
2. Burns	15,780	1,235	10,045	3,694	3,796	34,550	19.00
3. Canada Packers	15,710	1,519	7,756	108	4,366	29,459	16.21
4. Gainers	16,780	1,403	7,261	3,092	4,336	32,872	18.10
5. Capital Packers	4,152	170	2,048	0	989	7,359	4.05
6. F. G. Bradley	3,304	124	1,201	8	832	5,469	3.01
7. Centennial Packers	3,128	0	1,140	0	70	4,338	2.39
8. Edmonton Meats	2,672	40	1,195	0	471	4,378	2.41
9. Camp Provisioners (Wetaskiwin)	1,152	287	155	0	949	2,543	1.40
10. Queen City Meats	767	271	498	6	197	1,542	0.85
11. Coral Foods	642	0	0	0	293	935	0.51
12. Wolch's Meats	620	218	1,117	0	251	2,206	1.21
13. Af Myers	263	0	0	0	0	263	0.14
14. Ron's Meats (Wetaskiwin)	167	0	80	0	67	314	0.17
15. Debaji Foods (Wetaskiwin)	165	0	34	0	100	299	0.16

TABLE 5.1 (Continued)

Supplying Firms	Beef	Veal	Pork	Lamb	Poultry	Total	Per Cent of Total or Firm's Share
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
16. Safeway	150	5	79	4	194	432	0.24
17. Franz Meats (Fort Saskatchewan)	100	0	100	0	100	300	0.17
18. Nan's Meats (Fort Saskatchewan)	100	0	100	0	100	300	0.17
19. Woodwards	90	0	46	0	9	145	0.08
20. Coorsh Meats	77	0	0	0	0	77	0.04
21. Welch's Meats (Drayton Valley)	50	0	30	0	14	94	0.05
22. Parkland Packers	10	0	0	0	0	10	0.005
23. IGA	0	0	20	0	2	22	0.01
24. Supervalue	0	0	10	0	0	10	0.005
25. Gibbons Frozen Foods	0	0	18	0	50	68	0.03
26. Wespac	0	0	492	0	0	492	0.27
27. Macdonald Consolidated	0	0	0	0	10	10	0.005
28. South Edmonton Produce	0	0	0	0	45	45	0.02
29. Villitards	0	0	0	0	225	225	0.12
30. Lilydale	0	0	0	0	14,719	14,719	8.10

Source: 1. Purchase invoices of institutions, June 1977 - October 1977.

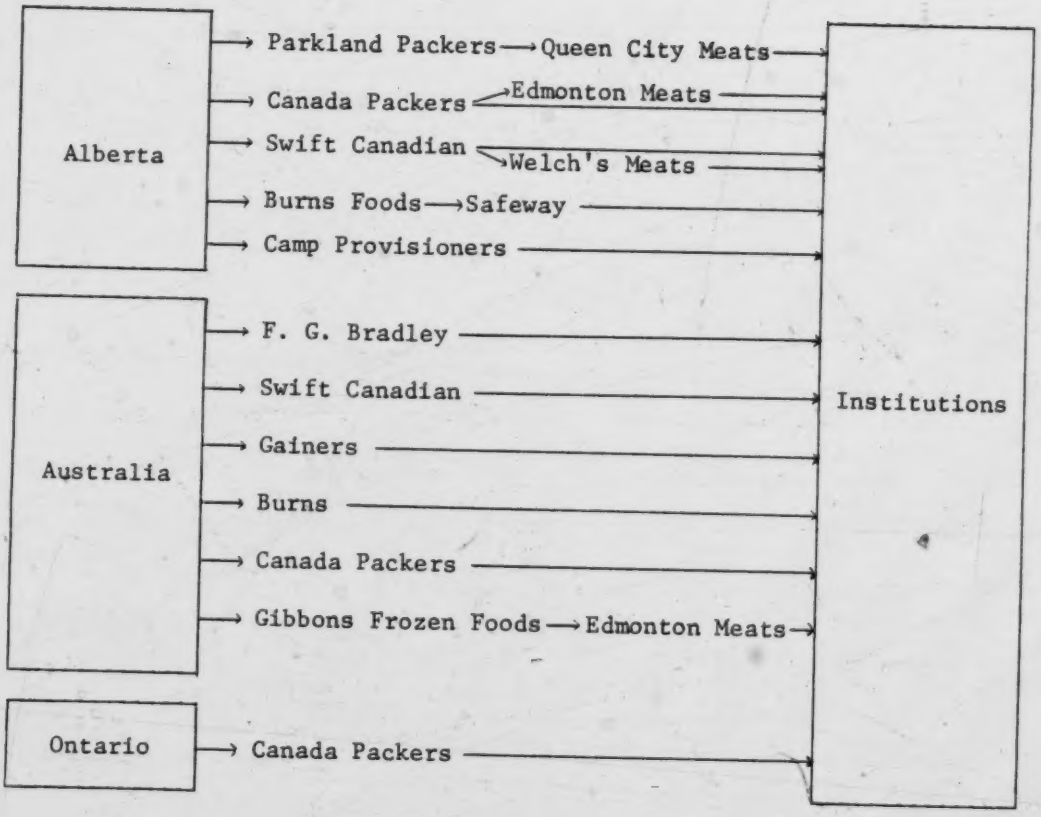


MEAT FLOWING INTO INSTITUTIONS
BEEF PERCENTAGE DISTRIBUTION BY ORIGINAL SOURCE

Alberta:	80%	United States:	3%
New Zealand:	8%	Other Canadian Provinces:	1%
Australia:	8%		

Available statistical data do not permit allocation of sales through all channels to the final destination.

FIGURE 5.1: Distribution Channels for Beef Reported by 5 Packers (Quantities shown represent a month's supply.)



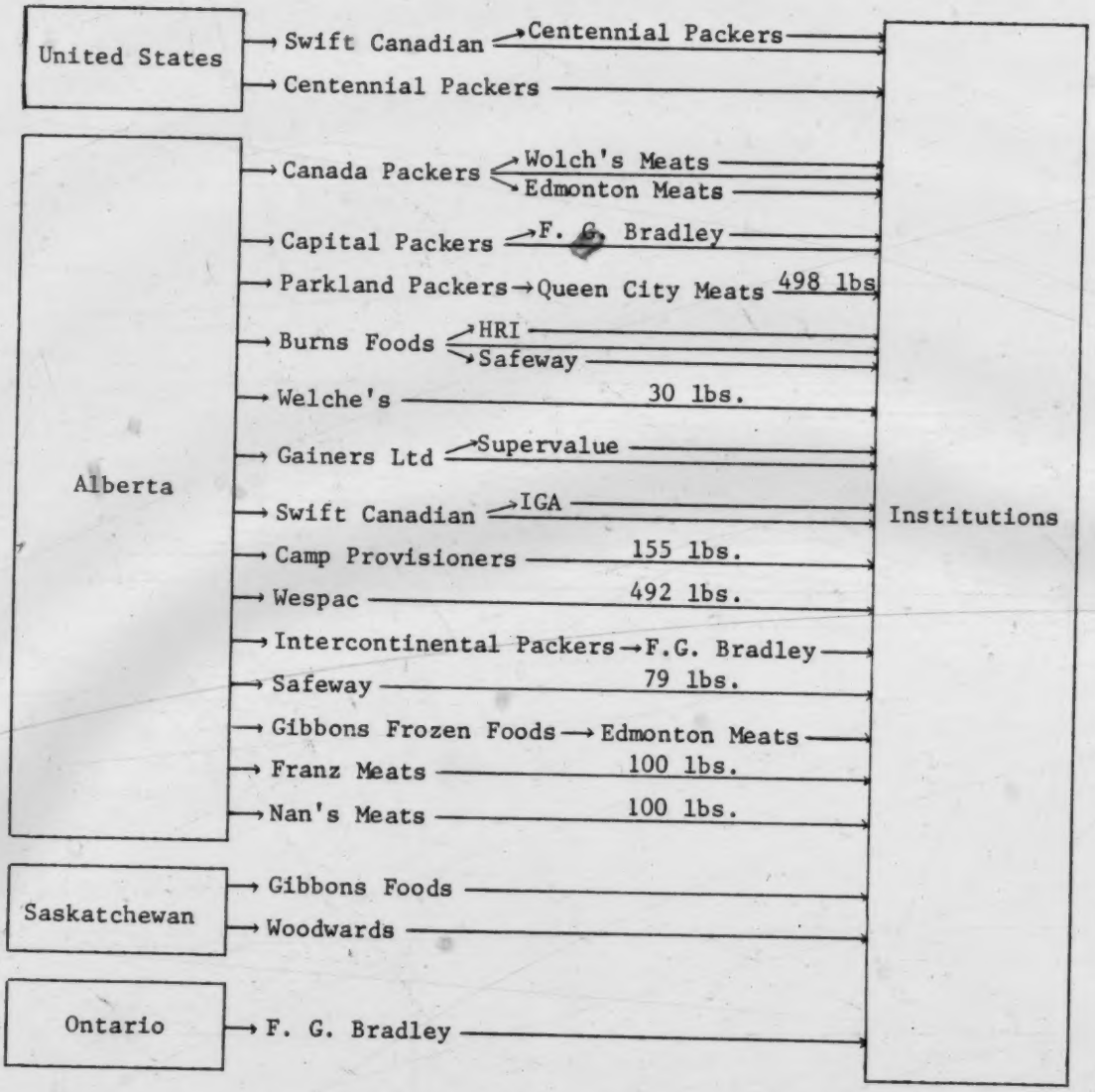
MEATS FLOWING INTO INSTITUTIONS

VEAL PERCENTAGE DISTRIBUTION BY ORIGINAL SOURCE

Alberta:	25%
Ontario:	5%
Australia	70%

Available statistical data do not permit allocation of sales through all channels to the final destination.

FIGURE 5.2: Distribution Channels for Veal from Original Source to Institutions Reported by 5 Packers.



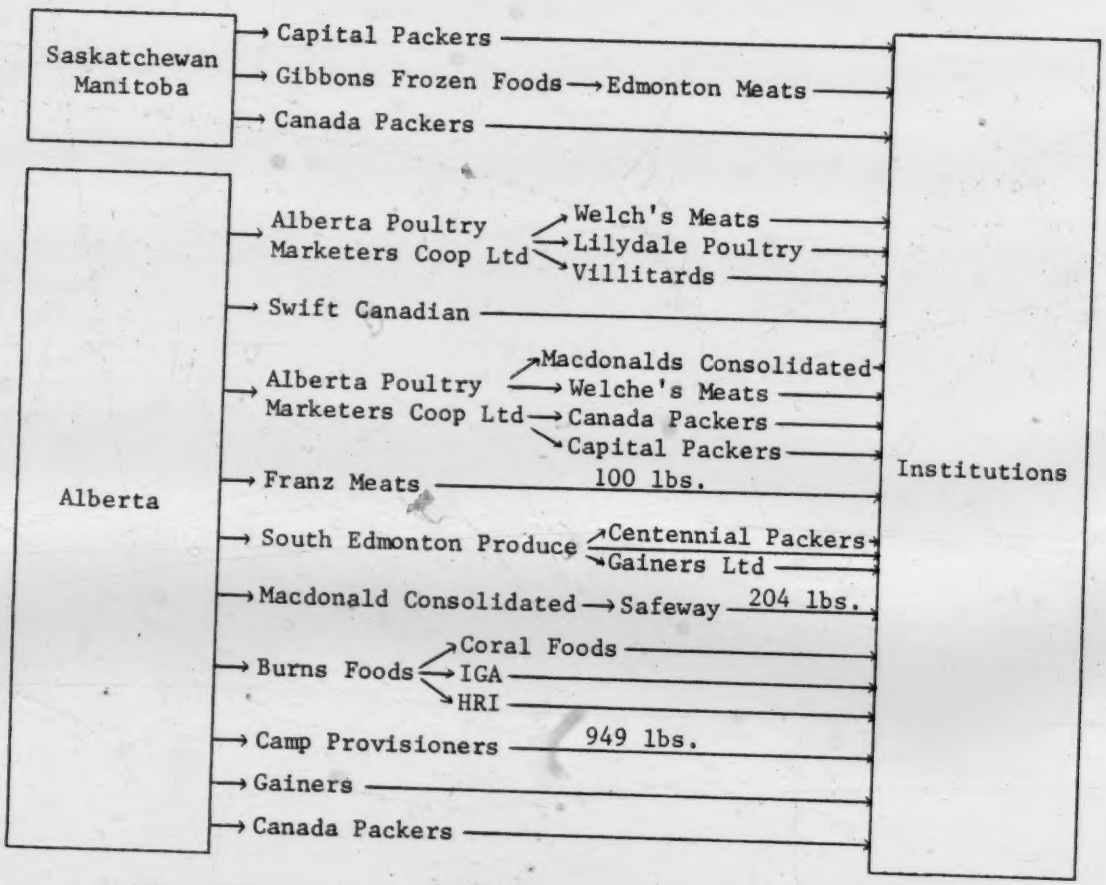
MEATS FLOWING INTO INSTITUTIONS

PORK PERCENTAGE DISTRIBUTION BY ORIGINAL SOURCE

Alberta:	90%	Ontario:	1.5%
United States:	8%	Saskatchewan:	0.5%

Available statistical data do not permit allocation of sales through all channels to the final destination.

FIGURE 5.3: Distribution Channels for Pork from Original Source to Institutions Reported by 5 Packers (quantities shown represent a month's supply).



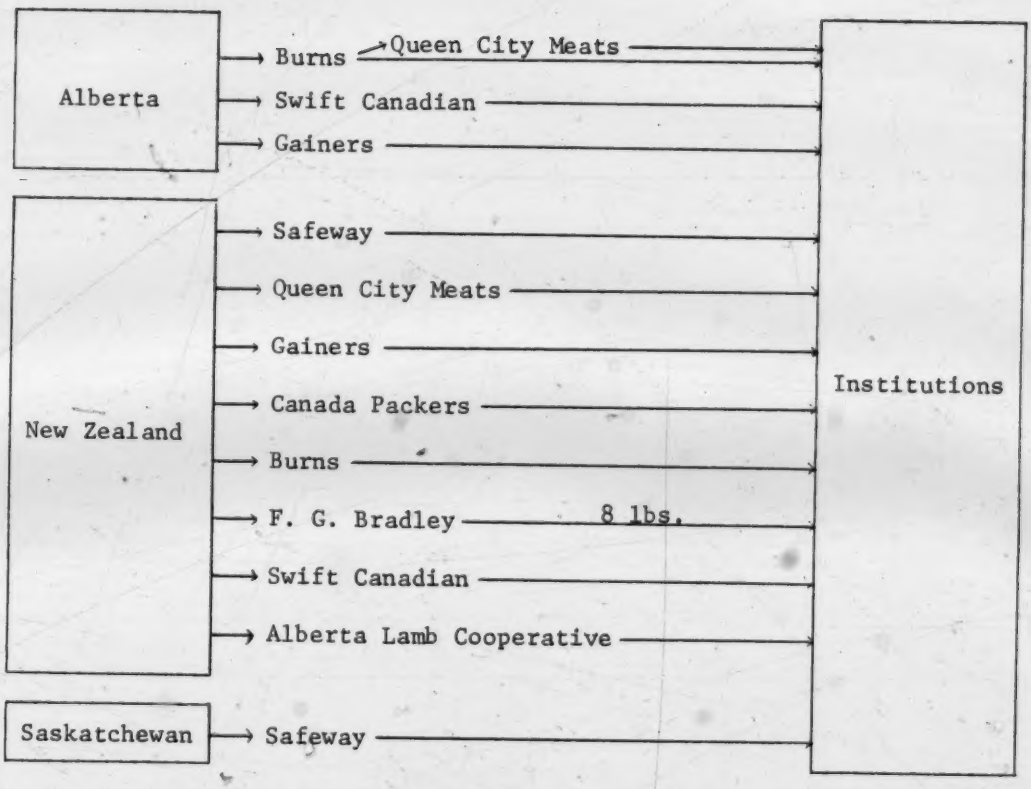
MEAT FLOWING INTO INSTITUTIONS

POULTRY PERCENTAGE DISTRIBUTION BY ORIGINAL SOURCE

Alberta:	95%
Saskatchewan:	2%
Manitoba:	3%

Available statistical data do not permit allocation of sales through all channels to the final destination.

FIGURE 5.4: Distribution Channels for Poultry Reported by 5 Packers (Quantities shown represent a month's supply.)



MEAT FLOWING INTO INSTITUTIONS

LAMB PERCENTAGE DISTRIBUTION BY ORIGINAL SOURCE

Alberta:	5%
Saskatchewan:	1%
New Zealand:	94%

Available statistical data do not permit allocation of sales through all channels to the final destination.

FIGURE 5.5: Distribution Channels for Lamb Reported by 5 Packers (Quantities shown represent a month's supply.)

their branch houses.[1] Direct marketing by surveyed packers and via branch houses constituted the largest channels accounting for over 86 per cent (86.44 per cent) of total sales they made to institutions, while indirect sales accounted for 13.56 per cent.[2] Direct marketings to institutions tended to reduce costs more for institutional buyers than indirect marketings.[3] Table 5.2 shows the classification of suppliers according to their functions.

The intermediate suppliers in the flow channels were essentially processors and wholesale distributors; thus, some flows such as those via brokers were nonexistent in the institutional market channel. It should be understood, however, that the dynamic nature of a marketing system in real life leads to changing sizes of flows and services so that value-added by each functional level tends to change depending on market conditions. Thus, the distribution channels may appear or disappear depending upon industry trends.

Suppliers and Their Functions

The names of suppliers of meats to the surveyed institutions and the quantities supplied are shown in Table 5.1. These suppliers

---

[1] Packer branch houses are satellite warehouse-processing-distributing centres owned and operated by a parent packing firm, and located away from the packing plant. They provide specialized cuts for large buyers.

[2] The 86.44 per cent was calculated from Table 5.1 by aggregating percentages supplied by the packers--Swifts, Burns, Canada Packers, Gainers, Capital Packers, and Lilydale. Indirect supplies were obtained by subtracting 86.44 from 100.

[3] John H. McCoy, Livestock and Meat Marketing (Westport, Conn.: The Avi Publishing Company, Inc., 1972), p. 200.

TABLE 5.2

FUNCTIONAL ROLE OF SUPPLIERS OF MEATS TO INSTITUTIONS

Suppliers	Functional Role				
	Packer	Processor	Wholesale Distribution	Branch House	Grocery Retailer
Burns	Packer	Processor	Distributor		
Gainers	Packer	Processor	Distributor		
Swifts	Packer	Processor	Distributor		
Canada Packers	Packer	Processor	Distributor	Branch	
Lilydale	Packer	Processor			
F. G. Bradley		Processor	Distributor	Branch	
Gibbon's Meats	Packer	Processor			
Coorsh (Custom)		Processor			
Coral		Processor			
Franz Meats (Custom)[1]		Processor			
Nan's Meats (Custom)[1]		Processor			
Capital Packers	Packer	Processor			
Edmonton Meats		Processor		Branch	
Queen City Meats		Processor			
Vilitards		Processor			
Af Myers			Distributor		
Debaji Foods (Custom)[1]		Processor			
Ron's Meats (Custom)[1]		Processor			
Wespack	Packer	Processor			
Wolch's		Processor			
HRI (Burns)				Branch	
Centennial Packers			Distributor		
Parkland Packers	Packer	Processor			
Gibbons Frozen Foods		Processor	Distributor		
Welche's Meats (Custom)[1]		Processor			
IGA					Retailer
Safeway					Retailer
Supervalu					Retailer
Macdonald Consolidated			Distributor		
Woodwards					Retailer

[1] "Custom" refers to processors who do substantial amounts of custom packing in various sizes for buyers.

comprised the big packers, the smaller packers, the local independents, many of which were one-plant firms, packers' branch houses, wholesale distributors, and large retail grocery stores (Table 5.2). The production capacity in terms of pounds of meat output per year, and ownership status of some of these suppliers are shown in Appendix C.

Packers

The discussion here is based on the reported packers' share of the institutional market. In terms of quantity, the larger packing houses predominated as suppliers to the institutions. These packers were Swift Canadian, Canada Packers, Burns Foods, and Gainers. Their market spanned Canadian and world markets. These four major packers accounted for over 74 per cent of total institutional meat supplies, with Swift Canadian in the lead, accounting for almost 21 per cent of the surveyed institutional supplies (Table 5.1). This result and the fact that the major packers enjoyed the largest share of total institutional meat supplies differed from Faminow's findings in his study of beef procurement by Edmonton restaurants.[1] Faminow found that the large national packers had not been able to control a large share of the restaurant supply business. Instead, he found that the bigger share was controlled by the purveyors who were more specialized to meet restaurants' specifications.

The percentage share of 74.29 recorded for the four biggest packers in the study area was almost identical to the figure recorded

---

[1] M. D. Faminow, "Beef Procurement by Edmonton Restaurants" (Unpublished Master's thesis, Department of Rural Economy, The University of Alberta, 1977), p. 107.

for these giant packers in Alberta since 1960 by the Commission of Inquiry.[1] The Commission reported that the four major packers had dominated federally inspected slaughter in the prairie provinces in the following proportions:

74 per cent of Alberta's kill,

92 per cent of Saskatchewan's kill, and

78 per cent of Manitoba's kill.

It therefore appears that the larger packers tended to keep their share of institutional meat supplies in Edmonton to the same proportional share of the federally inspected slaughter in the province.

The large packing houses were also processors and wholesalers of meats, although slaughtering and manufacturing remained their primary functions. In recent years, however, some of these firms have engaged in a limited amount of breaking and portion cutting of meats.

Selling at the packing plant level. Packers' share of institutional meat sales is high because of their ability to produce and sell at lower prices owing to marketing efficiency.[2] Marketing efficiency is achievable in these operations through sophisticated technological alternatives that make production possible at lower per unit cost than in small independent packing or processing plants. Also, marketing efficiency is easily achievable by the big packers through

---

[1] Commission of Inquiry into the Marketing of Beef and Veal, Report of the Commission of Inquiry into the Marketing of Beef and Veal (Ottawa: Printing and Publishing, Supply and Services, Canada, Catalogue No. CP 32-22, 1976), p. 26.

[2] J. H. McCoy, op. cit., p. 200.

direct sales to institutions without the use of costly intermediaries--brokers and independent wholesalers. The practice of direct sales to institutions is enhanced partly by the use of federal grades and specification buying which facilitates buying by telephone, especially by the institutions which demand carcasses. But, perhaps the major reason for the packers' large share is that they produce manufacturing meats which seem to be in great demand by institutions[1] (Table 6.5 in Chapter VI).

Smaller Packers and Local Independent Processors

Packers that are smaller in size and output capacity than the big packers are able to exert some influence in institutional meat supplies. Categorized as smaller packers are Capital Packers, F. G. Bradley, Centennial Packers, Edmonton Meats, and Lilydale Poultry (Appendix C). The estimated share of these packers is about 12 per cent for red meat supplies, and 42 per cent for poultry supplies (Table 5.1) for the study area.

Local independent processors, who are sometimes difficult to distinguish functionally from smaller packers, are the most numerous type of supplier organization. They control about 14 per cent of total institutional meat supplies (Table 5.1). These local plants basically engage in carcass breaking and processing, but frequently custom pack to individual customer's needs.

It was found during the survey that the smaller packers and local

---

[1] More will be said on manufacturing meats in institutions later in this chapter.

independent processors are popular with small institutions and those large institutions who desire their meats in portioned sizes. Smaller institutions find superior cooperation, service, and uniform quality cuts with smaller packers and local independents than they do with larger packers. Also, the small local packers or processors were found reliable for emergency supplies because of their proximity to some institutions, especially institutions in the rural areas for whom the local independents frequently custom-packed.

The proportion of meats supplied by each firm also indicated that the strength of smaller packers was greatest as suppliers of poultry, where they accounted for 42 per cent of total institutional supplies. However, this percentage was predominantly due to one supplier--Alberta Poultry Marketers Coop Ltd (Lilydale)--who supplied 14,719 lbs. of the total 17,081 lbs. or 86 per cent of poultry sales accounted for by the smaller packers in the study area.

Wholesale Distributors

Wholesalers as separate firms (independent wholesalers) are found not to constitute a major source of supply to the institutions. Except for two firms (Centennial Packers[1] and Macdonald Consolidated), supply organizations who are packers or processors also are wholesalers (Table 5.2). Since almost all the meats (except lamb) purchased by the institutions surveyed are obtained locally, and supplies are usually adequate, there is no need to employ the service of independent

---

[1] Centennial Packers is a wholesale distributor and not a packing plant in the study area. The word "packer" is really a misnomer.

wholesalers to facilitate procurement and sales of meats. However, some amount of imported meats or foods come through independent wholesalers into the institutions.

Packer Branch Houses

The branch house is a sales and distribution activity with a considerable amount of carcass breaking, processing, smoking, and curing.[1] To meet the growing demand for HRI cuts, some packers reported having started to establish separate packing houses and fully integrated breaking facilities. Faminow found that the restaurant segment of HRI market was controlled by purveyors because packers were less flexible than purveyors when asked to prepare beef to certain specifications.[2] Faminow found that packers, therefore, indicated that they would compete more vigorously in this market by establishing appropriate packing facilities.

At present only four of the supplying firms in the study area are found to serve as branch houses (Table 5.2). The establishment of this type of facility may not be essential for packers to effectively compete (since they actually are) in institutional meat supplies.

Retail Grocery Stores

Retail grocery stores (supermarkets) are found to play a relatively minor role in institutional meat supplies (Table 5.1). This type of supply outlet is used mainly by the very small family-size

---

[1] J. H. McCoy, op. cit., p. 200.

[2] M. D. Faminow, op. cit., p. 107.

institutions who always keep alert for supermarket meat specials. Thus, meat purchases from the retail grocery stores were sporadic and inconsistent. Safeway, Supervalue, IGA, and Woodwards were the commonly shopped grocery stores.

Selection and Retention of Suppliers

It is understood from the preceding section that meats purchased by institutions came from various supplier organizations, large and small alike. It was therefore thought necessary to understand the criteria considered by institutions for selecting their suppliers and how they judged the suppliers' performances in conforming to those criteria. In designing the survey, a variety of factors--price and non-price--were hypothesized to be criteria considered by institutions. Surveyed institutions' perception of price factor was in terms of an institution selecting and retaining the lowest price supplier, while the perceptions of non-price factors were viewed in terms of dependable service, uniform quality and sizes of cuts, reliability or consistency, proximity of supplier, advertising promotion, community image of the supplier, personal contact via the route salesman, cooperation, and government policy with regards to whom the suppliers should be. These factors are shown in Table 5.3.

The institutions were asked to rank these factors according to their importance in selecting a supplier. A descending order of importance was to be used, i.e., the most important factor was to be ranked number 1, the second most important, number 2, etc. The least important factor or no rank carried the highest number. A weighted

TABLE 5.3

FREQUENCY DISTRIBUTION OF THE RANKINGS OF FACTORS STATED AS CONSIDERED IN SELECTING AND RETAINING SUPPLIERS

Factors for Selecting and Retaining Meat Suppliers	Ranks							Weighted Average of Ranks	Grand Ranking All Institutions
	1	2	3	4	5	6	7 or no rank		
Dependable service	19	18	20	4	1	1	0	2.25	1
Lowest price	20	10	9	12	7	0	5	2.93	3
Uniform quality	14	18	17	11	1	0	2	2.60	2
Reliability	4	13	12	24	7	1	2	3.44	4
Advertising promotion	0	0	0	0	1	0	62	6.97	10[1]
Community image or goodwill	1	0	1	3	6	1	51	6.49	6
Proximity	2	2	1	2	6	0	49	6.19	5
Personal contact	0	0	0	3	1	0	59	6.82	8[1]
Cooperation	0	0	0	1	1	0	61	6.92	9[1]
Government buying policy	2	0	0	0	4	0	57	6.68	7[1]

[1] The factors ranked 7, 8, 9, and 10 are collapsed under a general heading "other" for the χ^2 test because of very low expected frequencies in many cells under the factors, and because each of the factors considered alone does not appear to be important.

average of the ranks was calculated to obtain a ranking by all institutions. Results showed that "dependable service" was stated to be the most important factor with 19 institutions ranking it number 1, 18 ranking it number 2, 20 ranking it number 3, and 4 institutions ranking it number 4. "Uniform quality" was stated as the second most important factor. Fourteen institutions ranked it number 1, 18 ranked it number 2, 17 ranked it number 3, and 11 institutions ranked it number 4. The lowest price factor was stated as the third most important. Other reasons considered important were reliability and consistency of a supplier in both product and service, proximity of the supplier to the institution, and community image of the supplier.

Based on respondents' opinions, advertising promotion was found to be unimportant in selecting a supplier; so was personal contact and government buying policy (Table 5.3). In short, most institutions believed that nothing mattered more in choosing a supplier than consistency and dependability in both product and service, and nothing would cause suppliers to be cancelled other than consistent violations of these criteria.

Chi-square analysis was applied to the table of ranks to determine whether there was any clearly interpretable pattern of stated ranking of the factors used as guidelines for selecting and retaining suppliers. The null hypothesis that there is no clearly interpretable pattern of ranking of factors used as guidelines for selecting and retaining suppliers was rejected at 0.5 per cent level. Thus, as shown in Table 5.3, there is a pattern of ranks of factors which institutions believe are used as guidelines for selecting and retaining suppliers.

Origin of Meats Used in Institutions

The purpose of this section is to determine what percentages of total food purchases by institutions were produced in Alberta, in other Canadian provinces, and in foreign countries. It also appears useful to determine the quantity of inter-provincial flows of meats consumed in the institutions. Of greater importance, however, is the quantity, quality and price of foreign meat, especially beef, entering the institutional market.

An investigation into imported meats, especially beef, is considered relevant because it has often been alleged that large quantities of foreign beef tend to depress Canadian cattle and beef prices[1] and that New Zealand and Australia have been "dumping" their beef in the Canadian market at unfair price levels.[2] Earlier research also indicated that imports from Australia went primarily into the processed meat industry (hamburger patties and sausages) and that a noticeable volume of wholesale cuts originating from the United States went into the HRI market.[3] It would therefore prove useful to document how much of the imported beef goes to institutional feeding operations.

---

[1] The Canadian press published numerous articles on this subject. One such article appeared in Toronto Globe and Mail, op. cit.

[2] Jim Dawson, "Canada's Beef Trade." (Unpublished report, Alberta Department of Agriculture, Edmonton, Alberta, 1977.)

[3] K. D. Smith, et al., op. cit.

Geographic Source of Meats Consumed in Institutions

Figures 5.1 to 5.5 indicate the geographic sources of the types of meats supplied to the institutions and their percentages as provided by five packers and processors who were interviewed. It should be pointed out that the figures were given in percentages and were rough estimates rather than specific quantities. Also, only three of the five could estimate these proportions. The averages of the proportions were used in the figures.

Beef. Alberta proved to be the dominant source (80 per cent) of beef consumed in institutions (Figure 5.1). Oceanic sources (Australia and New Zealand) were second with 16 per cent, United States third with 3 per cent, and other Canadian provinces accounted for only 1 per cent.

Surveyed institutions stated that domestic beef supplies came primarily from fed steers and heifers usually delivered to institutions as fresh meats. The upper cuts of beef carcass such as shoulder pot-roast or steak, boneless pot-roast or steak, short ribs, stew beef, corned brisket, and middle cuts such as flanks, ground beef and beef patties were said to constitute major fresh beef supplies to institutions (Table 6.5 and Appendix D2). Lighter carcasses and their resultant primal cuts are also used by institutions.

Imported beef cuts from United States were of the high quality, large, and expensive type destined for the HRI trade.[1] Smith's study, however, showed that very few of these cuts were used in the

---

[1] R. G. Marshall, "Beef and Pork in Canada : Demand, Supply and Trade." Paper submitted to the Food Prices Review Board, Ottawa, June 1974.

institutional segment of the HRI market, and that a noticeable volume of wholesale cuts from United States went into the hotel and restaurant trade.[1] Figure 5.1 shows that only 3 per cent of the surveyed institutional beef supplies came from the United States.

On the contrary, reported data by the surveyed institutions (Figure 5.1) shows that 16 per cent of beef supplies to them originated from New Zealand and Australia. Beef originating from these countries tended to be used for ground beef, hamburger patties, and manufactured meats. Hawkins, et al. found that in addition to boneless manufacturing meats, strip loins, tenderloins, top butts and bottom butts were entering Canada on occasion to be marketed by purveyors as economy price cuts.[2] These cuts were reported by Faminow as generally going to the HRI market,[3] while it was determined in this study that a great proportion of the various meat cuts of beef mostly demanded by institutions were also the low-priced cuts (Appendix D1).

Pork. A higher proportion of Alberta pork than Alberta beef was consumed in institutions (Figure 5.3). There was, however, a sizeable import proportion of pork--8 per cent--that came in from the United States, while 1.5 per cent came from Ontario. The packers reported that there had been supply shortages of pork (relating back to hog shortages on farms in Alberta) during the past three years and that the buoyant export market, especially to Japan, was partly accountable

---

[1] K. D. Smith, et al., op. cit.

[2] M. H. Hawkins, and R. McCormick, "The Australian Beef Industry: Report No. 10." Unpublished report to the Alberta Government.

[3] M. D. Faminow, op. cit., p. 42.

for domestic (Alberta) shortages. Imports from Saskatchewan and Ontario had to make up for the Alberta supply deficit.

Poultry. Alberta poultry was dominant in institutions, accounting for 95 per cent of institutional poultry supplies (Figure 5.4). Small proportions of out-of-province poultry--3 per cent of Manitoba's and 2 per cent of Saskatchewan's--were supplied to institutions.

Lamb and Veal. A great proportion of veal and lamb used in institutions was imported. The survey showed that 70 per cent of the veal and 94 per cent of the lamb used in institutions was grown in Australia and New Zealand, respectively (Figures 5.2 and 5.5). Only 25 per cent of the veal supplied to the institutions was produced in Alberta, while 5 per cent came from Ontario.[1] On the other hand, 94 per cent of institutional lamb supplies came from New Zealand, 5 per cent from Alberta, and 1 per cent from Saskatchewan. Foreign sources, therefore, dominated the supply of these two types of meats although institutions did not use them often.

Import Situation in Institutional Meat Supplies

One of the hypotheses to be tested in this study was that imported beef items constituted a large proportion (larger than 8 per cent) of the beef purchased by institutions. The hypothesis was supported by reported quantities of beef items consumed as shown in Table 6.5 in Chapter VI, and the proportion shown in Figure 5.1 for

---

[1] More on Alberta produced veal is discussed in Chapter VI.

imported beef. Beef imports into Canada from Australia and New Zealand over the last seven years have represented about 5 to 8 per cent of Canadian beef consumption.[1] These percentages are far below the surveyed institutions' share of foreign beef consumption, which was shown to be 19 per cent--16 per cent from New Zealand and Australia and 3 per cent from United States. The 16 per cent given as the proportion of the surveyed institutional beef consumption accounted for by imports from Oceanic countries--New Zealand and Australia--therefore did not appear to be an overstatement, considering the menu items popular with institutions (Table 6.5). The table showed that ground beef, hamburger patties, cured and processed beef accounted for almost 50 per cent (47.5 per cent) of all beef items consumed in institutions.[2]

Reasons for Imported Meats

It is not clearly understood why the overall trend has been towards increasing meat imports, especially in beef and veal. Lower prices of imported beef were often claimed to be a major reason,[3] while it was alleged that some local subsidiary firms often followed the parent company's instructions (often foreign-owned) with regards

---

[1] Jim Dawson, op. cit.

[2] It should be understood, however, that not all the 47.5 per cent originated from imports. A considerable proportion (average of 50 per cent) of ground beef received by institutions is in the fresh form and is supposedly Canadian produced.

[3] M. D. Faminow, op. cit., p. 43.

as to where they should procure their meats.[1] Yet Marshall argued that the influx of imports from Australia and New Zealand was a result of deficient domestic manufacturing beef supplies.[2] To have an insight into which of the above factors accounted for the exact reasons for importing beef, the packers and processors who supplied imported meats to institutions were asked to evaluate the following suggested reasons for importing meats according to their importance. The reasons were that:

(a) imports cost less than Alberta produced meats;

(b) there was a short supply of Alberta produce of the imported meat type;

(c) imported meats have better taste and quality;

(d) it is the company's head office buying policy to import meats.

All the packers expressed the opinion that price was the dominant factor for their purchase decisions regarding the importation of beef, veal, and pork, and that the short supply of similar types of meats in Alberta was a secondary factor. However, consistent short supply of Alberta produced lamb was considered the dominant factor for importing the latter, while the lower price of imported lamb was considered a subsidiary factor. No other factors besides the above were considered as reasons for importing meats.

---

[1] This view was obtained from a discussion with a manager of a franchised fast-food restaurant in Edmonton.

[2] R. G. Marshall, op. cit., June 1974.

CHAPTER VI

QUANTITIES, VALUES, AND PROPORTIONS OF VARIOUS TYPES OF MEATS PURCHASED BY INSTITUTIONS

This chapter is concerned with the type, quantity, and value of meats used by the surveyed institutions. The analysis in the chapter is undertaken in three parts. Part 1 shows the total quantity and value of meats used by all the institutions surveyed and by each type of institution. It also analyzes the proportion of total meat quantity and value accounted for by each major meat group. A discussion of meat items (or menu items) most popular with the institutions is undertaken in Part 2. Also reported in this section are the surveyed institutions' opinions on the various types of meats purchased. The last part of the chapter discusses the factors that the institutions consider in buying the various types of meats.

Major Meat Groups

A wide variety of meat items are served in institutional food-service operations. The meat items were assigned to their appropriate class in the five major homogeneous meat groups, i.e., beef, veal, pork, lamb, and poultry. Beef ranks number 1 in terms of quantity used of all meats, accounting for over 88,000 pounds of the estimated total of approximately 193,000 pounds of all meats used in a month by the institutions surveyed (Table 6.1). This quantity represents approximately 46 per cent of the total meat the surveyed institutions consumed (Table 6.2). Five of the seven institutional types had beef

TABLE 6.1

SURVEYED INSTITUTIONAL ESTABLISHMENTS WITH FOOD SERVICE, AVERAGE MONTHLY QUANTITY OF MEAT RECEIVED BY TYPE OF INSTITUTION SURVEYED, 1977

Type of Institution	Meat Products					Total by Institutional Type	Per Cent of Total Meat Used
	Beef	Veal	Pork	Lamb	Poultry		
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
Hospitals and Nursing Homes	40,345.12	2,192.6	20,225.4	594	25,824.8	89,181.92	46.3
Universities and Colleges	16,055	3,770	10,920	7,105	5,770	43,620.00	22.6
Schools and Day Care Centres	4,215	300	1,237	160	1,170	7,082.00	3.7
Welfare Homes and Institutions	3,217.45	90	1,111.50	10	960.7	5,389.65	2.8
Penal Institutions	11,045	-	7,700	-	1,700	20,445.00	10.6
Defence Centres	10,700	1,300	5,900	200	3,500	21,600	11.2
In-Plant/In-Office Cafeterias	2,932	-	1,585.5	-	898.7	5,416.2	2.8
Total	88,509.57	7,652.6	48,639.4	8,069	39,824.2	192,734.77	100.0

Source: Appendix B2.

TABLE 6.2

MEAT TYPE AS A PERCENTAGE OF TOTAL MEAT USED MONTHLY IN SURVEYED INSTITUTIONS

Meat Products	Hospitals and Nursing Homes	Universities and Colleges	Schools and Day Care Centres	Welfare Homes and Institutions	Penal Institutions	Defence Centres	In-Plant/ In-Office Cafeteria	Average Percentage for All Institutions
Beef	45.2	36.8	59.5	59.7	54.0	49.6	54.1	45.9
Veal	2.5	8.6	4.2	1.7	0.0	6.0	0.0	4.0
Pork	22.7	25.0	17.5	20.6	37.7	27.3	29.3	25.2
Lamb	0.6	16.3	2.3	0.2	0.0	0.9	0.0	4.2
Poultry	29.0	13.3	16.5	17.8	8.3	16.2	16.6	20.7
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Table 6.1.

accounting for approximately 50 per cent or more of their meats. Beef accounted for approximately 60 per cent of all meats consumed by schools and welfare homes, while hospitals and nursing homes recorded approximately 45 per cent, and the universities and colleges accounted for approximately 37 per cent. The reason for the lower percentages of beef in hospitals and colleges is that more expensive meats like veal and lamb are used as variety dishes, and poultry is used more by hospitals, universities and colleges than by high schools and welfare homes.

Pork products came second of the five types of meats used. Over 48,000 pounds of pork were used in a month. The quantity represents approximately 25 per cent of all meats used, and also represents a ratio of about 1 to 2 in relation to the quantity of beef consumed. This ratio is in sharp contrast to the ratio of 2 to 10 given by Agriculture Canada[1] with regards to quantity of pork consumed in relation to quantity of beef consumed away from home. This implies that pork is consumed more by the institutional segment of the HRI market than by the hotel and restaurant segment.

Poultry ranked a close third to pork with almost 40,000 pounds used, about 21 per cent of all meats. The reason for the relatively high percentage is that poultry meats are a relatively important dietary meat in hospitals and nursing homes where poultry consumption (29.0 per cent of all meats consumed) exceeded that of pork. The relatively higher use of poultry is due to its flavour, juiciness, and ease of chewing for the type of people in this type of institution.

---

[1] Agriculture Canada, The Canadian Pork System (Ottawa: Food Systems Branch, April 1977), p. 87.

Use of veal and lamb was relatively limited. Veal and lamb each accounted for about 4 per cent of total meat used. The percentage distribution of the estimated quantities is shown in Figure 6.1.

With regard to the proportion of each type of meat bought by each type of institution, the problem was to learn whether the proportion of each type of meat bought by each institution depended on the type of institution or the type of meat. The null hypothesis tested is that the type of institution or the type of meat does not influence the quantity of any type of meat bought by each institution, and that any observed differences in the proportions are only due to chance.

A two-way analysis of variance was performed on the quantities of each type of meat bought by the institutions. Results of the analysis (Table 6.3) show that the type of meat as well as the type of institution significantly influence the quantity of each meat type bought by each institution. The hypothesis was rejected at the 5 per cent level of alpha. The interaction of the two factors (type of meat and type of institution) also significantly influence the type of meat bought by each institution. The interaction effect is significant at the 1 per cent level of alpha, so is the type-of-meat effect.

It can thus be concluded that:

1. Beef, pork, and poultry are the popular meat types demanded by the surveyed institutions.
2. The hospitals and nursing homes have a relatively higher demand for poultry, while welfare homes, penal institutions, in-plant/in-office cafeterias, schools, and day care centres use relatively smaller amounts of veal and lamb.
3. Hospitals, universities and colleges are the main users of

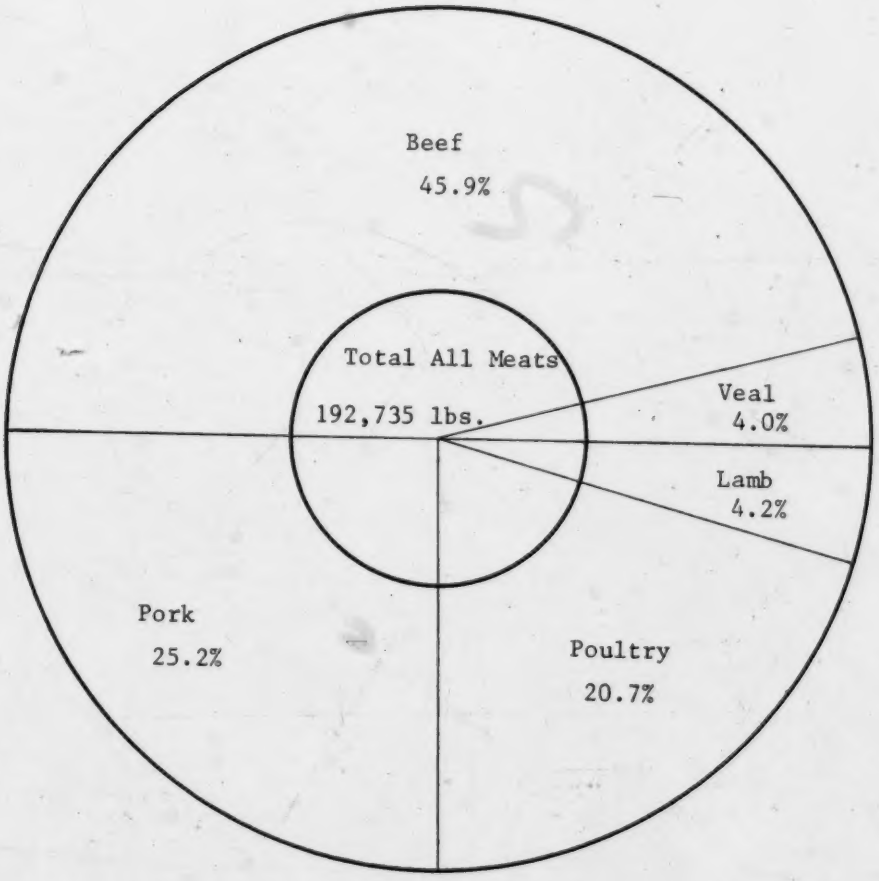


FIGURE 6.1: Surveyed Institutions' Distribution of Estimated Meat Quantity by Meat Groups

Source: Table 6.2.

TABLE 6.3

ANALYSIS OF VARIANCE TEST RESULTS ON TYPES OF MEATS AND TYPE OF INSTITUTIONS

Source	Sum of Squares	Degrees of Freedom	Mean Squares	Calculated F-Ratio	Tabulated F-Ratio at Alpha Levels .05	.01	Conclusion Accept or Reject Ho .05	Conclusion Accept or Reject Ho .01
A (Type of Institution)[1]	15.763	5	3.153	2,646	2.38	3.37	reject Ho	accept Ho
Residual or Error	66.714	56	1.191					
B (Type of Meat)	209.185	4	52.296	85.876	2.41	3.41	reject Ho	reject Ho
AB Interaction	33.008	20	1.650	2.710	1.62	1.97	reject Ho	reject Ho
Residual (B)	136.409	224	0.609					

[1] The original number of Type of Institutions was 7, but modified to 6 for the ANOVA Test purposes. The modification was effected by collapsing the 2 penal institutions with the only 1 defence institution under one category because of the small samples in each stratum.

veal and lamb.

Comparisons

The proportions of the various types of meats used in the surveyed institutions can be compared with national distributions. Calculated average percentages for the major meat types consumed in Canada over the past ten years show beef to account for about 44 per cent, while pork accounts for about 30 per cent.[1] Poultry is third with 22 per cent, while veal and lamb each accounted for approximately 2 per cent. These figures show that the proportion of beef, veal and lamb consumed in institutions is higher than the national average, but pork is lower, while poultry is almost the same as the national percentage.

The proportions shown in Table 6.2 for schools appear somewhat similar to those found by Anderson, et al.[2] when they estimated the quantities and proportions of the types of meats delivered to public schools over a twelve month period. According to their study, 60 per cent of the meat used was beef. Lamb and veal were not used, while poultry accounted for 16.5 per cent and it was used more than pork.

Value Estimates of Meats Used in a Month

Beef's share of total cost of all meats used in the surveyed institutions was estimated at $99,852 or 45.4 per cent of the estimated value of $219,904 (Tables 6.4 and 6.5). Its share was almost equal to

---

[1] Agriculture Canada, Handbook of Food Expenditures, Prices and Consumption (Ottawa: Economics Branch Publication Number 75/6, May, 1975).

[2] Anderson, et al., op. cit.

TABLE 6.4

INSTITUTIONAL ESTABLISHMENTS WITH FOOD SERVICE, AVERAGE MONTHLY VALUE OF MEAT RECEIVED BY TYPE OF INSTITUTION SURVEYED, 1977

Type of Institution	Meat Products					
	Beef	Veal	Pork	Lamb	Poultry	Total
	$	$	$	$	$	$
Hospitals and Nursing Homes	43,615.53	5,000.25	28,032.79	1,034.63	24,304.76	101,987.96
Universities and Colleges	23,860.22	3,010.95	13,520.78	6,993.02	5,474.76	52,959.73
Schools and Day Care Centres	3,706.41	391.00	1,153.88	394.00	1,315.82	6,961.11
Welfare Homes and Institutions	4,085.91	126.90	1,440.90	23.00	746.71	6,423.42
Penal Institutions	7,025	-	8,268.00	-	1,637.00	16,930.00
Defence Centres	13,910	1,822	7,965	280.00	3,850	27,829
In-Plant/In-Office Cafeterias	3,649.1	-	2,284.80	-	878.73	6,812.63
Total	99,852.17	10,351.1	62,666.15	8,724.65	38,207.78	219,903.85

Number of Institutions reporting are Hospitals and Nursing Homes 28, Universities and Colleges 5, Schools and Day Care Centres 10, Welfare Homes and Institutions 13, Penal Institutions 2, Defence Centres 1, In-Plant/In-Office Cafeterias 4.

Source: Appendix B2.

TABLE 6.5

ESTIMATED VALUE OF MEAT PRODUCTS AS A PERCENTAGE OF TOTAL VALUE OF MEAT USED BY TYPE OF INSTITUTION SURVEYED

Meat Products	Hospitals and Nursing Homes	Universities and Colleges	Schools and Day Care Centres	Welfare Homes and Institutions	Penal Institutions	Defence Centres	In-Plant/ In-Office Cafeteria	Average Percentage for All Institutions
Beef	42.8	45.1	53.2	63.6	41.5	50.0	53.6	45.4
Veal	4.9	5.7	5.6	2.0	0.0	6.6	0.0	4.7
Pork	27.5	25.6	16.6	22.4	48.8	28.6	33.5	28.5
Lamb	1.0	13.2	5.7	0.4	0.0	1.0	0.0	4.0
Poultry	23.8	10.4	18.9	11.6	9.7	13.8	12.9	17.4
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Table 6.4.

the 45.9 per cent that it accounted for when quantity of purchases was used as the unit of measure. Similarly, poultry, with an estimated 20.7 per cent of the quantity used, accounted for 17.4 per cent of the estimated value of all meats used. The proportional share of veal and lamb in value of purchases was 4.7 per cent and 4.0 per cent, respectively. The value share for veal was up, while lamb was down relative to their quantity shares, and although pork accounted for 25.2 per cent of all quantity used, its share rose to almost 29 per cent when dollar value of purchases was estimated. The influence of higher aggregate prices per pound of meat is therefore clearly evident in pork and veal. The percentage distributions of the estimated value of the meats are shown in Figure 6.2.

Institutions' Usage of Meats

It can be recalled (Table 3.2) that the hospital category contains many of the largest institutions in terms of the number of meat plates served per institution per day. The number of hospitals and nursing homes surveyed was 28 of the 63 institutions sampled, or 44.4 per cent, and they accounted for 44.8 per cent of total meats used (Table 6.2). The second largest users of meats are the post-secondary institutions, i.e., the universities and colleges. While this type of establishment represents only 7.9 per cent of the institutions sampled, it accounted for over 23 per cent of total meat used. This high proportion is due to the large quantity of meat used monthly (12,000 lbs. of beef, 3,500 lbs. of veal, 8,800 lbs. of pork, 7,000 lbs. of lamb, and 4,770 lbs. of poultry) by the Northern Alberta Institute of Technology for instructional purposes (Appendix B2). Other notable users of meat

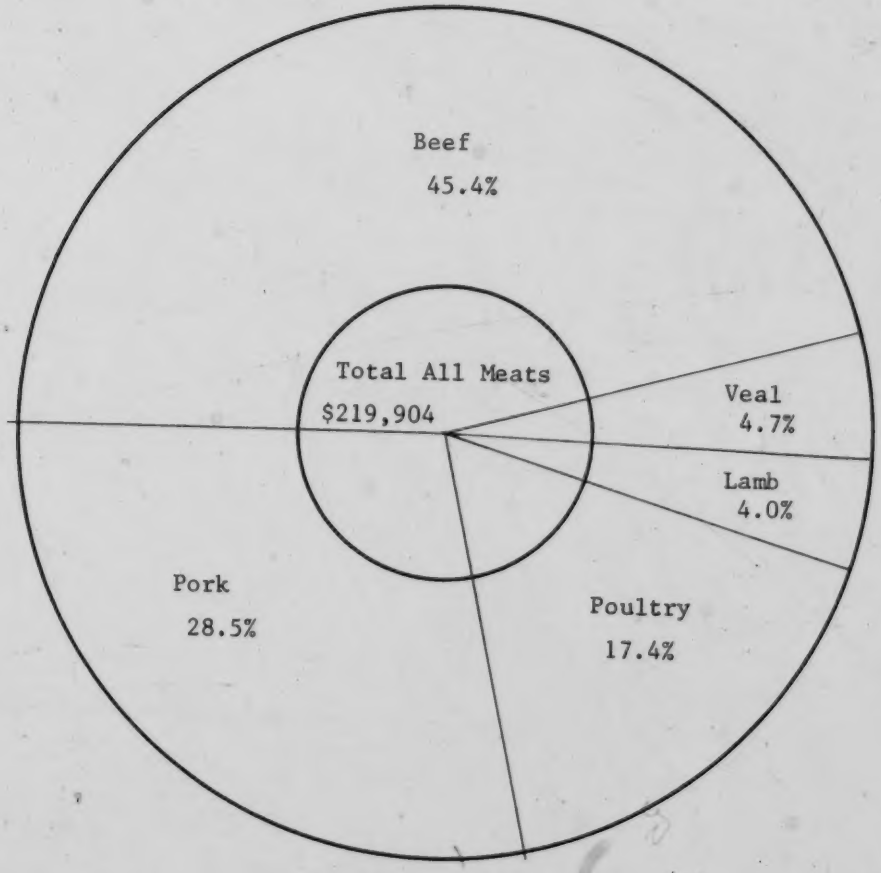


FIGURE 6.2: Percentage Distribution of Estimated Value of Meat Consumed by the Surveyed Institutions

Source: Table 6.5.

are the Defence Centre and the penal institutions. The Defence Centre, which accounted for only 1.6 per cent of the institutions sampled, consumed 11.5 per cent of the estimated quantity of meats used in institutions, while the penal institutions consumed 10.9 per cent of total meats but accounted for only 3.2 per cent of total institutions sampled. Relatively small amounts of meats are consumed by schools and day care centres, the welfare homes, and the employee cafeterias.

Important Products Within Major Meat Groups

The number of meat items or menu items in each of the major meat groups varies considerably among the institutions surveyed. The beef group has many items, whereas the lamb and the poultry groups have relatively few. Seven products were of paramount importance with regards to meat items commonly used in these institutions, each accounting for over 6,000 pounds of total quantity of meats received by the 14 institutions reporting (Table 6.6). They are ground beef, roast beef, steaks, variety meats (beef), ham, cured pork meats (excluding canned), and chicken fryers.

Ground beef (including hamburger patties) was most used of all items of beef meats, accounting for almost one-third (31.8 per cent) of all beef used. Steak was second in line, while roast beef was third. The use of variety meats was highly noticeable, accounting for 17.2 per cent of total beef used.

Ham was the most important item in the groups of other red meats, representing almost 39 per cent of all pork used. Cured (excluding canned) pork products ran a close second with about 37 per cent of total pork used.

In the poultry group, chicken fryers were the foremost item,

TABLE 6.6

ESTIMATED QUANTITIES AND PERCENTAGES OF INDIVIDUAL MEAT ITEMS RECEIVED BY SELECTED INSTITUTIONS IN A MONTH (14 INSTITUTIONS REPORTING)

Individual Meat Items	Hospitals and Nursing Homes	Universities and Colleges	Schools and Day Care Centres	Welfare Homes and Institutions	Penal Institutions	In-Plant/ In-Office Cafeteria	Total All Meat Items	Percent of Major Meat Group
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
BEEF								
Roasts	1,940	3,050	10	875	422	0	6,297	17.5
Ground Beef[1]	1,910	5,800	112	693	2,426	480	11,421	31.8
Steak[2]	1,551	1,850	0	1,400	695	907	6,403	17.8
Cured and Processed[3]	1,336	880	0	170	2,919	315	5,620	15.7
Variety Meats[4]	1,352	1,720	51	353	2,144	545	6,165	17.2
Beef Total	8,089	13,300	173	3,491	8,606	2,247	35,906	100.0
PORK								
Ham	997	2,500	0	342	2,575	1,110	7,524	38.7
Chops, chopettes, cutlets	815	350	0	278	0	20	1,463	7.5
Cured (excluding canned)[5]	1,021	3,480	0	395	1,778	475	7,149	36.7
Spareribs	260	950	0	0	360	0	1,570	8.1
Legs, Loins	81	0	28	0	483	0	592	3.0
Roasts	594	0	0	436	35	100	1,165	6.0
Pork Total	3,768	7,280	28	1,451	5,231	1,705	19,463	100.0

TABLE 6.6 (Continued)

Individual Meat Items	Hospitals and Nursing Homes	Universities and Colleges	Schools and Day Care Centres	Welfare Homes and Institutions	Penal Institutions	In-Plant/ In-Office Cafeteria	Total All Meat Items	Percent of Major Meat Group
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
VEAL								
Cutlet, chopettes	355	360	0	10	0	0	725	39.7
Roasts	0	40	0	80	0	0	120	6.6
Variety--cubed, diced, liver	130	20	0	0	0	0	150	8.2
Hips	0	600	0	0	0	0	600	32.9
Loins	0	230	0	0	0	0	230	12.6
Veal Total	485	1,250	0	90	0	0	1,825	100.0
LAMB								
Legs	0	300	0	10	0	0	300	14.7
Roasts	535	400	0	0	0	0	935	46.0
Chops	10	320	0	0	0	0	330	16.2
Variety[6]	40	30	0	0	0	0	70	3.4
Loins	0	400	0	0	0	0	400	19.7
Lamb Total	585	1,450	0	10	0	0	2,035	100.0

TABLE 6.6 (Continued)

Individual Meat Items	Hospitals and Nursing Homes	Universities and Colleges	Schools and Day Care Centres	Welfare Homes and Institutions	Penal Institutions	In-Plant/ In-Office Cafeteria	Total All Meat Items	Percent of Major Meat Group
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
POULTRY								
Chicken Fryers	3,311	2,100	0	679	90	0	6,180	43.0
Chicken Roast	532	600	0	230	848	0	2,210	15.4
Turkey Roasts	1,988	1,350	0	285	0	0	3,623	25.3
Variety--chicken loaf, turkey rolls, etc.	720	960	0	33	620	0	2,333	16.3
Poultry Total	6,551	5,010	0	1,227	1,558	0	14,346	100.0

[1] Ground Beef consists essentially of fresh ground meats and hamburger patties.

[2] Steak comprises minute steak, chuck steak, steakettes, round steaks, sirloin steaks, and rib steaks.

[3] Cured and Processed Beef are weiners, bologna, garlic sausage, corned beef.

[4] Variety meats in beef are stew beef, liver, meatballs, diced beef, beef fat bulk.

[5] Cured Pork products are bologna, smoked ham, lean pork cubes, sausages, weiners.

[6] Variety items in lamb are cubed lamb, kidney, tongue, testes.

representing 43 per cent of all poultry meats used. However, turkey roasts showed importance by accounting for about 25 per cent. Veal cutlets, hips, and lamb roasts were also favourite meat items in institutions.

In general, it should be understood that the reliability of a quantity or value estimate tends to be associated with the number of institutions reporting the item. That is, an estimate for a given food item tends to be more reliable as the number of institutions reporting increases. Consequently, reliance on estimated quantities and proportions will rise in proportion to the number of reporting institutions.

Institutions' Opinions on the Types of Meats Bought

One of the questions asked during the survey and emphasized in the questionnaire was that which dealt with institutions' views and comments on current usage of the various types of meats. The motive of the inquiry was to learn more about the current and future requirements of the institutional foodservice industry so as to know what products could be improved and made more acceptable to the institutional market.

Beef

In general, responses from institutions indicated that they were quite satisfied with the grades, quality, freshness, and cuts of beef they bought. Except for four institutions in the hospital and nursing home category, all the institutions indicated that supplies were

adequate although portioned cuts were very expensive. Two of the institutions with inadequate supplies of desired beef cuts pointed out a lack of experienced meat-cutters in the rural areas in which they were situated. The other two institutions imported beef from Eastern Canada because one was a "religious home" whose religious demands with regards to meats could not be met by local suppliers and, therefore, it had to import "Kosher meats" from Montreal. The other institution imported meats because packers were often inconsistent in sizing their portioned cuts, i.e., cuts were either too small or too large.

Most institutions bought their meats in the fresh form and only two institutions wanted more convenience items than they already had.

Most institutions stated that they wanted to see strictly Alberta beef used in their establishments; however, they reported that there was no way of knowing where the meats they ate were grown. However, there were some items or by-products that many institutions would like to see made available to them. They are:

(a) smaller packaging of corned beef;

(b) grade B beef;

(c) more European sausages, e.g., Salami;

(d) smaller cuts of beef;

(e) some leaner beef roasts;

(f) gourmet items;

(g) Swiss steak.

Veal

Few institutions serve veal, and those who serve it do so only for convenience and to provide variety. Many institutions reported

to have given up veal as a menu item except for veal cutlets which are served only periodically. Most common reasons given for not buying veal are:

(a) Veal cuts are expensive and the carcass yield is low compared to beef. Therefore, many institutions have relinquished its use to restaurants and hotels, except for the institutions who use it for instructional purposes.

(b) Veal supplies are not readily available and are on a seasonal basis so many institutions have given it up as a menu item. The institutions who like veal have to resort to imports from New Zealand and Australia. But the problem with imported veal is that one cannot depend on its availability. Some institutions would buy veal if it were readily available and in the desired box sizes.

(c) Alberta veal does not compare with European or Eastern Canadian veal which is more tender and has the taste that institutional consumers like. Older people often don't like the taste of the veal provided in institutions. Good light veal which provides the desired taste is not generally available and often light beef is substituted. Light beef comes from 600 pound animals which are grain or grass-fed, whereas true veal comes from animals weighing between 200 and 300 lbs. and which have been strictly milk-fed.

Lamb

A general lack of interest in this product was expressed by institutional meat buyers. The lack of interest was also evident in

the small proportion (4 per cent) that lamb made up of total meat purchases of the surveyed institutions. The most frequently given reason for not using lamb was lack of taste for it. Lamb was also reported to be very expensive and supplies were not regular and dependable. About 94 per cent of total institutional lamb used was reported to be imported and there were delays and uncertainties about time of arrival.

Many respondents expressed the opinion that Canadian lamb is of better quality and more meaty than imported lamb, but that the former is more expensive and not readily available especially in the cuts that were desired. Many, how ver, would like to see Canadian lamb more competitive with imported lamb.

Pork

Comments about pork were generally favourable. All comments seemed to indicate that respondents perceived Alberta pork as of top quality. Except for one large hospital who expressed dissatisfaction with short-shipments and consistent lack of uniformity in sizes supplied, all respondents seemed to indicate that they found the selection adequate. However, there were complaints about higher relative prices of pork, especially by small institutions who had to operate on very limited budgets. Some institutions said that they would be willing to buy more lean boneless portioned cuts and spareribs for sweet and sour if they were available and at lower prices. The respondents thought that such cuts would yield less waste and save labour in cutting.

Poultry

Poultry seemed to be popular with institutions and satisfaction

with the product was expressed. The most popular poultry item is the chicken fryer--the 2-2½ lb. size. Roasting chicken and turkey are also popular; however, some institutions would like better quality turkey rolls. Almost all institutions did not use the other type of poultry items at all. Ducks are not usually available in desired quantities, and geese are in short supply. Wild game was definitely not used. Ducks, geese, and wild game were said to be so hard to get in desired quantities that institutions did not bother to ask for them.

A greater proportion of poultry meats, especially chicken, fowl and turkey, were bought fresh rather than frozen.

Factors Related to Buying Various Types of Meats

Many factors are related to the quantity of meats used in institutions. In a preceding section, attention was drawn to differences in the quantities of various types of meats demanded by institutions. These differences largely are reflections of more basic factors, the most important of which are tastes and preferences, dietary requirements, food fads in the culture, relative price of the meat product, and variety needs.

These factors were given as reasons for buying the various types of meats. The institutions were asked to rank these factors according to their order of importance for each meat type. The ranking of these factors by institutions are summarized in Tables 6.7 to 6.11. Tastes of the institutional consumers were stated to be the most important factor for buying any type of meat used, except for lamb, where variety was

TABLE 6.7

FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF STATED REASONS FOR BUYING BEEF

Reasons for Buying Beef	Ranks: 1	2	3	4	5 or no rank	Weighted[1] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	Number of Institutions Ranking						
Consistently lower price	9	7	9	13	25	3.60	4
Low fat content	6	15	19	16	7	3.05	3
Taste	36	17	7	1	2	1.67	1
Culture of people	11	14	14	19	5	2.65	2
Easily obtainable	1	8	14	11	29	3.94	5

[1] Weighted average of the ranks is computed for 63 institutions for each factor. The weighted average is computed as

$$\Gamma\omega = \frac{\Sigma rx}{\Sigma x}, \quad \text{where } r = \text{the ranks } 1, 2, \ldots, 5 \text{ and } x = \text{number of institutions responding.}$$

The lowest weighted average carries a grand ranking of 1 by all institutions, the highest carries a grand ranking of 5.

TABLE 6.8

FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF STATED REASONS FOR BUYING VEAL

Reasons for Buying Veal	Ranks					Weighted[1] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	1	2	3	4	5 or no rank		
	Number of Institutions Ranking						
Consistently lower price	1	4	3	9	13	3.97	4
Low fat content	9	10	8	1	2	2.23	2
Taste	17	13	0	0	0	1.43	1
Culture of people	2	2	14	10	2	3.26	3
Easily obtainable	1	1	5	10	13	4.1	5

[1] Weighted average of the ranks is computed for 30 institutions for each factor. The weighted average is computed as

$$\Gamma\omega = \frac{\Sigma rx}{\Sigma x}, \quad \text{where} \quad r = \text{the ranks } 1, 2, \ldots, 5$$
$$x = \text{number of institutions reporting.}$$

The lowest weighted average carries a grand ranking of 1 by all institutions, the highest carries a grand ranking of 5.

TABLE 6.9

FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF STATED REASONS FOR BUYING PORK

Reasons for Buying Pork	Ranks					Weighted[1] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	1	2	3	4	5 or no rank		
	Number of Institutions Ranking						
Consistently lower price	2	3	9	34	15	3.90	4
Low fat content	2	1	1	10	49	4.75	5
Taste	45	11	2	0	5	1.56	1
Culture of people	4	12	31	9	7	3.05	3
Easily obtainable	6	32	15	3	7	2.57	2

[1] Weighted average of the ranks is computed for 63 institutions for each factor. The weighted average is computed as

$$\Gamma\omega = \frac{\Sigma rx}{\Sigma x}, \quad \text{where} \quad r = \text{the ranks } 1, 2, \ldots, 5$$
$$x = \text{number of institutions reporting.}$$

The lowest weighted average carries a grand ranking of 1 by all institutions, the highest carries a grand ranking of 5.

TABLE 6.10

FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF STATED REASONS FOR BUYING POULTRY

Reasons for Buying Poultry	Ranks					Weighted[1] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	1	2	3	4	5 or no rank		
	Number of Institutions Ranking						
Consistently low price	7	11	6	9	30	3.70	4
Low fat content	10	19	20	12	2	2.63	2
Taste	42	14	7	0	0	1.44	1
Culture of people	2	18	12	19	12	3.33	3
Easily obtainable	1	3	15	21	23	3.98	5

[1] Weighted average of the ranks is computed for 63 institutions for each reason. Weighted average is computed as

$$\Gamma\omega = \frac{\Sigma rx}{\Sigma x}, \quad \text{where} \quad r = \text{the ranks } 1, 2, \ldots, 5$$
$$x = \text{number of institutions responding.}$$

The lowest weighted average carries a grand ranking of 1 by all institutions, the highest carries a grand ranking of 5.

TABLE 6.11

FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF STATED REASONS FOR BUYING LAMB

Reasons for Buying Lamb	Ranks					Weighted[1] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	1	2	3	4	5 or no rank		
	Number of Institutions Ranking						
Consistently low price	1	2	5	6	3	3.47	4
Low fat content	5	8	2	2	0	2.06	2
Variety	8	4	4	0	1	1.94	1
Culture of people	2	2	5	7	1	3.18	3
Easily obtainable	1	1	1	2	12	4.35	5

[1] Weighted average of the ranks is computed for 17 institutions for each factor. The weighted average is computed as

$$\Gamma\omega = \frac{\Sigma rx}{\Sigma x}, \quad \text{where } r = \text{the ranks } 1, 2, \ldots, 5$$
$$x = \text{number of institutions responding.}$$

The lowest weighted average carries a grand ranking of 1 by all institutions, the highest carries a grand ranking of 5.

an overriding factor. Thirty-six institutions ranked taste number 1 for buying beef, 45 ranked it 1 for buying pork, 42 for buying poultry, while 17 ranked it 1 for buying veal. "Culture of people" or food fads was ranked second for buying beef, but "low fat content" was ranked second for buying veal and poultry, while "easily obtainable" was ranked second for pork. Consistently lower price of a product, as stated by respondents, appeared, therefore, not to be a strong factor since it ranked fourth among the factors for buying each meat type.

On the basis of the ranks given, chi-square analysis was applied to each table to determine whether the observed patterns of rankings were exactly how the institutions perceived them to be. The null hypothesis tested was that there is no clearly interpretable pattern of ranking of the reasons given for buying each type of meat. This hypothesis was rejected for each type of meat at 0.5 per cent level (Table 6.12). Thus, the tests indicate substantial agreement among institutions that taste is an overriding factor for buying each type of meat except lamb, for which the variety factor ranks number 1.

Tastes, Preferences and Food Fads

Ethnic, religious, or geographic characteristics showed up distinctly in institutional food habits. These traits appeared to determine the tastes and fads of institutional meat consumers, especially in hospitals and nursing homes. People in Alberta, where livestock is raised, tend to prefer eating beef. This attitude may also explain why the amount of lamb consumed is so small in institutions since lamb is used mainly for variety dishes only.

TABLE 6.12

RESULTS OF CHI-SQUARE TESTS ON STATED REASONS FOR BUYING VARIOUS MEAT TYPES

Reasons for Buying	Calculated Chi-Square	Tabular Chi-Square	Conclusion: Accept or Reject Ho	Degree of Freedom	Level of α
Beef (Table 6.7)	133.56	34.267	reject Ho	16	.005
Veal (Table 6.8)	114.65	34.267	reject Ho	16	.005
Pork (Table 6.9)	367.22	34.267	reject Ho	16	.005
Poultry (Table 6.10)	190.48	34.267	reject Ho	16	.005
Lamb (Table 6.11)	62.94	34.267	reject Ho	16	.005

Ho: The null hypothesis tested for each of these tables is that there is no clearly interpretable pattern of ranking of the reasons given for buying the various types of meats.

Ha states that there are interpretable patterns of rankings as shown by the tables.

Graphical Analysis of Price-Quantity Relationships

Owing to the surveyed institutions' conflicting perceptions of the importance of price in their purchasing habits, a graphical illustration of the prices and quantities of the types of meat bought are made for a major hospital with which data were available (Appendices F1 to F5). The purpose is to determine whether there is a correlation between prices and quantities bought in order to establish whether or not institutional meat-buyers are responsive to meat prices. Data available are on a monthly basis over a period of 30 months--January 1974 to June 1976 (Appendix F6).

Graphical illustration (Appendix F1) of the prices and quantities of beef shows that as its prices fall more quantities of beef are bought. Thus, it can be concluded from the available data that the institution in question is price-responsive with respect to beef purchases.

Similar relationships to beef can be drawn for pork and lamb which tend to be purchased more as their prices fall (Appendices F3 and F4). However, this type of relationship is not observed for veal and poultry (Appendices F2 and F5) which are often bought in greater quantities even at higher prices.

From the illustrations, therefore, price may not necessarily be an index of the quantity in every type of meat bought in the very short run, i.e., quantities purchased of any type of meat may not be responsive to that meat's price. However, in the long run, combinations of prices and tastes may be important factors that influence

institutions' purchases of the types of meats bought.

Relative Price of the Product

Surveyed institutions stated that their reaction in purchasing one type of meat in response to a change in another is low. Particularly, they stated that purchasing pork in response to changed beef prices is almost nil, although more beef is reported bought in response to a change (rise) in the price of pork. The reason given by the surveyed institutions is that widespread publicity and pronouncements from the medical profession on the possible linkage of obesity and overweight to diseases of the heart and blood vessels have resulted in some shifting away from fatter to leaner types of meat. The surveyed institutions, therefore, thought that pork consumption has, as a consequence, sustained adverse affects due to the public image of pork as a relatively fat meat, while poultry has grown very popular as a low-fat-content meat.

Use of Meat Substitutes or Analogues

Foods such as eggs, fish, cheese, vegetables, etc., can sometimes be used to replace meats to a degree. Surveyed institutional buyers (except for three of them--Table 6.14), however, expressed that no substitution of such meat analogues are made in their diets. They stated that one meat item can, however, be substituted for another, or one portion cut of a type of meat (e.g., roast beef for steakettes) can be substituted for another. The institutions, especially the hospitals and nursing homes, who tended to follow their menus very strictly, usually made this type of substitution.

Income and Population

Income was never given as a determining factor of the quantity and types of meat bought, although population changes were given as a determinant of trends in meat quantities purchased (Table 6.14). The reason for the no-income factor is that menus served in institutions are the same for every consumer regardless of his level of income, and no individual purchases are made for the population. The rich and the poor pay the same amount for foods (meats) they eat. On the contrary, population may influence the types of meats bought in response to a relative change in their prices, and may have an important effect when considering total meat consumption. Other things being equal, a 1 per cent increase in the number of people will result in about a 1 per cent increase in the overall quantity of meats consumed in the institution.

Trends in Meat Quantity Purchased by Surveyed Institutions

Table 6.13 shows reported changing trends in the quantity of each type of meat bought by surveyed institutions. Twenty-four institutions reported an increase in the quantity of beef bought over the past two years; three for veal, nine for pork, one for lamb, and twenty for poultry. Only one institution reported a decrease in the quantity of beef bought, but six institutions reported a veal decrease, nine for pork, five for lamb, and six for poultry. By and large, the quantities of each type of meat bought have remained unchanged in most institutions.

Reported reasons for the changes in quantities bought of each type of meat are shown in Table 6.14. The surveyed institutions

TABLE 6.13

REPORTED TRENDS IN THE QUANTITIES OF MEATS BOUGHT OVER PAST TWO YEARS, 1974-1976

Type of Meats	Noticeable Trends in Purchases			Institutions Not Reporting
	Up	Down	Unchanged	
	Institutions Reporting			
Beef	24	1	37	1
Veal	3	6	53	1
Pork	9	9	42	3
Lamb	1	5	53	4
Poultry	20	6	37	0

TABLE 6.14

REPORTED REASONS FOR THE REPORTED TRENDS IN MEAT QUANTITY PURCHASES

Reasons for Reported Trends	Reported Trends in Purchases									
	Beef		Veal		Pork		Lamb		Poultry	
	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down
	Institutions Reporting									
Population increase	10	-	1	-	4	-	1	-	6	-
Population decrease	-	-	-	-	-	1	-	-	-	-
Price increase	2	-	2	4	4	3	-	1	4	3
Price decrease	7	-	-	-	1	-	-	-	2	1
Taste increase	9	-	-	-	4	-	-	-	8	-
Taste decrease	-	-	-	-	-	1	-	6	-	-
Not always available	-	-	-	1	-	-	-	-	-	-
Use of meat substitutes	-	1	-	-	-	1	-	-	-	1
Too much fat	-	-	-	-	-	2	-	-	-	-

reported that the quantity of beef purchased went up owing to population increase, taste increase, and price decrease, as reported by ten, nine, and seven institutions, respectively. The same reasons were given for the rise in the quantity of poultry bought--eight institutions reported the quantity increase as being due to increase in taste, six due to population increase, and only two institutions due to price decrease.

It can also be observed from the table that price increases led to more quantities of certain meats being bought. The reason given for this purchasing behaviour was that, in order to maintain the proportion of each type of meat programmed in the menu, exact quantities of each type of meat had to be purchased even if their prices increased.

In summary, beef, pork, and poultry appeared to be the meat types most popular with institutions, and virtually all the institutions surveyed expressed satisfaction with the products. The surveyed institutions stated that veal and lamb were not much used owing to lack of taste, high relative prices, and unavailability of adequate and regular supplies. Similarly, the use of convenience foods was limited as most institutions liked to purchase their meats fresh or frozen to be cooked by themselves. Tastes of institutional consumers and culture were stated as the two most important factors for buying the types of meats used in the surveyed institutions, while low price of a meat was not stated to be a strong factor. However, graphical analysis showed that beef, pork, and lamb purchases are made in response to price changes.

CHAPTER VII

INSTITUTIONAL FOOD MANAGEMENT PRACTICES AND UTILIZATION PATTERNS OF VARIOUS MARKET FORMS OF MEATS[1] IN DIFFERENT STAGES OF PROCESSING[2]

Introduction

Meats are purchased by institutions in large quantities like intermediate goods, but are used by institutions as final consumption goods. Most institutions buy portion-controlled and standardized cuts from packers and purveyors; the cuts are sometimes further processed before being used as final goods. The institutional market serves as an interface with a group of consumers, and as such it becomes necessary to consider, within the context of institutional purchases of meats, the utilization patterns and factors affecting procurement and use of various forms of meats at different stages of processing (i.e., fresh cooked meats and convenience or pre-cooked frozen forms of meats).

---

[1] Market form of meats means the physical dimension of food items when purchased, such as portioned cuts, whole carcasses, or size of units of packaging.

[2] Lifquist outlines the stages of processing as defined by the United States Department of Agriculture as follows: (1) Foods which consist of a combination of two or more individual foods or contain commodities that have lost most or all of their original identity; (2) Menu items completely prepared in off-premise preparation centres and transported for assembly-service. See: R. C. Lifquist, Expenditure for Processed Foods by Employee Food Service Manufacturing Plants, Research Report No. 458 (Washington, D.C.: United States Department of Agriculture, 1961).

In this chapter information is provided on the characteristics of the institutional market. Also provided is information on food-service operations used in institutions, especially with regard to institutional catering, the use of various forms of meats, and the size of the food management companies in institutional foodservice.

Type of Food Management Officials in Institutions Surveyed

Table 7.1 shows the various titles assumed by food management officials as reported by institutions surveyed. Food management officials in the surveyed institutions range from non-skilled or specialized officials in food service, such as clerks, cooks, registered nurse, group home parent, and component manager, to the highly skilled professional people such as dieticians, chefs, and food production supervisors and managers. Hospitals and nursing homes, universities and colleges, and in-plant/in-office cafeterias are the institutional types which enlist the services of highly trained professionals in food service. Hospitals are the only surveyed institutions which fully employ the services of dieticians, with only eight of the surveyed institutions using this type of expertise. The majority of the dieticians and foodservice managers in charge of food operations were in large hospitals in the city. On the other hand, most of the cooks, chefs, and registered nurses in charge of food operations were in small hospitals or nursing homes located in rural areas away from the City of Edmonton. This implies a shortage of dieticians in hospitals located a distance away from the major city, economic restrictions in employing professional dieticians in small hospitals, and also an acute requirement for food managers in these areas.

TABLE 7.1

DISTRIBUTION OF FOOD SERVICE OFFICIALS IN THE SURVEYED INSTITUTIONS BY TYPE OF INSTITUTION

Institutional Food Management Officials	Types of Institutions							
	Universities and Colleges	Hospitals and Nursing Homes	Welfare Homes and Institutions	High Schools and Day Care Centres	Correctional Institutions	Defence Centres	In-Plant/ In-Office Cafeteria	Total
Dietician		8						8
Food Service Director		1		1		1		3
Food Service Manager		5					4	9
Food Production Supervisor	1	1						2
Cook		3	2		2			7
Administrator		1		1				2
Director			2	4				6
Chef		5		2				7
Registered Nurse		3						3
Supervisor			3					3
Group Home Parent			4					4
Clerk			2					2
Food Service Administrator	1							1
Cafeteria Manager	1							1
Component Manager	1			1				2
Coordinator				1				1
Food Service Supervisor	1							1
Purchasing Director		1						1
Total	5	28	13	10	2	1	4	63

Source: Appendix B1.

In most of the surveyed institutions within the categories of welfare homes and schools or day care centres, the person in charge of food operation was also responsible for menu planning, except in a few cases where the services of a consulting dietician were available. This is why titles such as administrator, director, supervisor, group home parent, and clerk predominated in these types of institutions.

In large hospitals food procurement is divided into the menu planning function and the purchasing function. Food quality specifications and procurements are delegated to a purchasing department, while menu planning is the responsibility of the dietary department. Under this system the dietary department is responsible for determining quantity, quality, and time of delivery, while the purchasing department negotiates prices and selects sources of supply. In some small hospitals or nursing homes where there is a dietician in charge of food operation, quality specification and procurement is delegated to supportive dietary personnel, usually the dietary technician. The two functions of menu planning and food purchases are usually collapsed under a single management--e.g., the foodservice manager--in non-hospital institutions. The employment of non-skilled persons to manage institutions' foodservice operations has implications with regards to non-economic purchasing practices either directly by purchasing items which are too expensive, or indirectly through inappropriate long-cycle menu planning.

Pattern of Menu and Meals Served

A wide variety of menu cycles were used in institutional food service. Menu cycles varied from daily (or no menu) patterns to six

month cycles (Table 7.2). Menu cycles also varied among the institutions within a given institutional type. For example, with hospitals and nursing homes, menu cycles ranged from three weeks to six months. However, the two most prevalent were the four-week and the six-week cycles. Fifteen of the 63 (approximately 25 per cent) institutions used the four-week cycle, while 13 of the 63 (approximately 20 per cent) institutions used the six-week cycle. Menu cycle in institutional feeding operations may be important rigidities in menu-based buying on the institutional market and, therefore, the influence of menu cycles in determining institutional meat buyers' responsiveness to meat prices. All the institutions surveyed gave the information that every effort is made to procure the meat types prescribed on the menu regardless of price changes. It thus follows that institutions with menu cycles of long duration may not consider price as the most important factor in purchasing meats. Institutional meat purchases, therefore, may not be highly responsive to very short-run price changes.

With regards to the meat products used, all the instituations surveyed gave the information that no difficulties had been encountered in procuring the meat types on their menu. The reason given was that any type of meat, for instance, lamb or veal, which has a record of being very difficult to obtain, owing perhaps to uncertainties about supply, or very high prices, is conventionally dropped from the menu. Also, in case of impending shortages of some type of meat cut, perhaps because of price changes, preference will be given to an institution's residents or patients rather than to the staff cafeteria. The surveyed institutions stated that virtually no substitutes are made between types of meats served in case of shortages of a meat type,

TABLE 7.2

FREQUENCY DISTRIBUTION OF MENU CYCLE USED BY THE SURVEYED INSTITUTIONS

Type of Institution	Menu Cycle												Number Reporting
	Wkly	2 Wks	3 Wks	4 Wks	5 Wks	6 Wks	8 Wks	10 Wks	3 Mths	4 Mths	6 Mths	No Menu	
Hospitals and Nursing Homes	0	0	3	6	2	7	2	0	2	3	3	0	28
Universities and Colleges	0	0	1	3	0	1	0	0	0	0	0	0	5
Welfare Homes and Institutions	1	2	0	3	1	2	0	0	0	0	0	4	13
Schools and Day Care Centres	4	0	0	3	0	1	0	1	0	0	0	1	10
Penal Institutions	0	0	0	0	1	0	0	0	0	0	1	0	2
Defence Centres	0	0	0	0	0	1	0	0	0	0	0	0	1
In-Plant/In-Office Cafeteria	1	0	1	0	0	1	0	0	0	0	0	1	4
Total	6	2	5	15	4	13	2	1	2	3	4	6	63

e.g., pork or lamb. But in the case of shortages of a special item of meat (say, beef roast or beef steak), another item of the same meat type would be substituted (e.g., ground beef substituted for roast beef instead of pork cutlets or lamb chops for roast beef). Institutional menu programmers tried to ensure that all meat types were included in the menu in the desired specific proportions and usually no substitutions were made if some item happened to be more expensive than the other during the on-going menu period.

Meals are served one to four times per day depending upon the particular institution. Breakfast, lunch, dinner, and snacks constitute the four types of meals served. Forty-nine of the 63 institutions surveyed, or about 78 per cent, served the three main meals--breakfast, lunch, and dinner--for both institution staff and residents (Table 7.3).

Some institutions have boarders and some do not. Those with boarders, such as hospitals, welfare homes, penal institutions, the university, and the Defence Centre, serve meals three to four times per day, whereas those without boarders, such as schools and day care centres, in-plant/in-office cafeterias, and some colleges, serve only the noon meal. The noon meal or lunch is served most often by educational institutions with day students not living in residence. Most of the hospitals, schools and day care centres use snacks for both residents and staff, but snacks are relatively unimportant in welfare homes, penal institutions, and the Defence Centre.

Types of Foodservice Operations Used

Various types of feeding operations are used in institutional foodservice. Institutions, both with and without self-operated and

TABLE 7.3

FREQUENCY DISTRIBUTION OF SURVEYED INSTITUTIONS SERVING VARIOUS TYPES OF MEALS IN A DAY

Type of Institution	People Served	Number of Institutions Serving				Number Reporting
		Breakfast	Lunch	Dinner	Snack	
Hospitals and Nursing Homes	Patients	28	28	28	11	28
	Staff	5	28	9	24	
Universities and Colleges	Students	5	5	3	3	5
	Staff	1	5	1	2	
Welfare Homes and Institutions	Residents	11	13	13	0	13
	Staff	9	13	10	4	
Schools and Day Care Centres	Students	0	10	0	9	10
	Staff	0	10	0	8	
Penal Institutions	Residents	2	2	2	0	2
	Staff	0	2	0	2	
Defence Centre	Residents	1	1	1	0	1
	Staff	1	1	1	0	
In-Plant/In-Office Cafeteria	Workers	3	4	0	1	4
	Staff	2	4	0	1	

self-managed kitchens, contract our their kitchen operations and management to food management companies or use a catered foodservice system provided by some catering firms. Institutions which used the latter forms of foodservice operations stated that they chose the system because they had no boarders or no kitchen facilities, or because they found it cheaper and more convenient for the type of foodservice desired.[1]

The food management companies who assume the responsibility of providing, operating, and managing institutions' foodservice plan the meals, purchase the food, hire and pay the wages of all personnel. Institutions contract this function out so as to reduce their responsibility for employing qualified personnel to handle the service and to eliminate having to deal with the attendant labour union problems.

Table 7.4 shows the type of foodservice operations used in institutions. The conventionally operated kitchen proves to be the most popularly used form of foodservice operation with 60 out of 63 institutions surveyed, or 95 per cent, using that type of operation. Eight institutions have their kitchen operations contracted out to food management companies, while four use the services of catering firms. Some institutions use both contracted kitchen operations and the catering system. Examples are hospitals and nursing homes.

At present a sizeable proportion (12 of 63) of institutions have food management service. Food management services are primarily

---

[1] More with regard to hypothesis testing of reasons for using and not using catered food systems is discussed later in this chapter.

TABLE 7.4

SYSTEMS OF FOODSERVICE OPERATION IN THE SURVEYED INSTITUTIONS

Institutional Types	Have Conventionally Operated Kitchen	Kitchen Operation Managed by Institution	Kitchen Operation Contracted Out to Food Management Company	Food Service Catered by Food Management Company	Number Reporting	Per Cent Served by Food Management Company
						%
Hospitals and Nursing Homes	28	24	4	1	28	17.9
Universities and Colleges	4	3	1	1	5	20.0
Welfare Homes and Institutions	12	12	1	1	13	7.7
Schools and Day Care Centres	10	10	0	0	10	0.0
Penal Institutions	2	2	0	0	2	0.0
Defence Centre	1	1	0	0	1	0.0
In-Plant/In-Office Cafeteria	3	2	1	1[1]	4	50.0[2]
Total	60	54	8	4	63	

[1] The 1 represents an aggregate of 17 in-plant/in-office cafeterias catered by a food management company.

[2] The 50 per cent calculated does not reflect accurately the influence of the food management companies in employee food services owing to the aggregate form in which information was provided. Assuming that figures provided are disaggregated to account for 17 individual employee cafeterias, the 50.0 per cent calculated could have been 85.0 per cent.

employed in in-plant/in-office cafeterias where they account for 50 per cent of this category of institution's foodservice operations. The influence of the food management firms is also seen in hospitals and nursing homes, the universities and colleges, and in welfare homes and institutions, where about 18 per cent, 20 per cent, and about 8 per cent, respectively, use food management services.

Buyers' Selected Cuts

A major difference between the retail store meat trade and the HRI trade is the fact that stores take the entire side of beef or pork while HRI outlets usually buy specific sections and cuts of the carcass. The survey of the institutional segment of the HRI market showed varied views regarding the types of cuts bought. Some institutions saw advantages in buying carcasses while others preferred the idea of buying primal cuts or portioned cuts.

Eight institutions bought not less than 10 per cent of their beef as hanging carcass, and five of the eight institutions bought 100 per cent of their beef in that form (Table 7.5). Similarly, four institutions bought 100 per cent of their veal, four institutions purchased 100 per cent of their pork, and two institutions bought 100 per cent of their lamb as carcasses, while 24 institutions purchased all their poultry as whole birds (Tables 7.6, 7.7, 7.8, 7.9).

Important among the advantages cited by institutions that buy carcasses were lower costs, since the institutions have regularly employed butchers who know and can make exactly the size, type, and cut of meat they want from the carcass. The reporting institutions

TABLE 7.5

NUMBER OF SURVEYED INSTITUTIONS BUYING VARIOUS PROPORTIONS OF BEEF CUTS

Cuts or Form of Meats	Percentage Ranges										
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	Total
	Number of Institutions										
Whole carcass	0	1	0	0	1	0	1	0	0	5	8
Primal cuts	0	1	1	0	3	4	4	1	1	7	22
Portioned cuts	2	1	8	3	1	0	1	3	1	28	48

TABLE 7.6

NUMBER OF SURVEYED INSTITUTIONS BUYING VARIOUS PROPORTIONS OF VEAL CUTS

Cuts or Form of Meats	Percentage Ranges							Total
	1-10	11-20	21-30	31-40	41-70	71-90	91-100	
	Number of Institutions							
Whole carcass	1	0	0	0	0	0	4	5
Primal cuts	0	1	0	1	1	0	0	3
Portioned cuts	0	1	1	0	1	1	15	19

TABLE 7.7

NUMBER OF SURVEYED INSTITUTIONS BUYING VARIOUS PROPORTIONS OF LAMB CUTS

Cuts or Form of Meats	Percentage Ranges							Total
	1-10	11-20	21-30	31-40	41-70	71-90	91-100	
	Number of Institutions							
Whole carcass	0	0	0	0	0	0	2	2
Primal cuts	0	0	0	0	0	0	7	7
Portioned cuts	0	0	0	0	0	0	10	10

TABLE 7.8

NUMBER OF SURVEYED INSTITUTIONS BUYING VARIOUS PROPORTIONS OF PORK CUTS

Cuts or Form of Meats	Percentage Ranges							Total
	1-10	11-20	21-30	31-40	41-70	71-90	91-100	
	Number of Institutions							
Whole carasss	0	0	0	0	2	0	4	6
Primal cuts	0	2	0	0	8	5	9	24
Portioned cuts	1	5	3	2	2	2	24	39

TABLE 7.9

NUMBER OF SURVEYED INSTITUTIONS BUYING VARIOUS PROPORTIONS OF POULTRY

Cuts or Form of Meats	Percentage Ranges							Total
	1-10	11-20	21-30	31-40	41-70	71-90	91-100	
	Number of Institutions							
Whole birds	1	1	2	0	6	6	24	40
Primal cuts	-	-	-	-	-	-	-	0
Portioned cuts	0	6	2	2	1	2	17	30

indicated that this advantage is meaningful to the big institutions who find it economical to employ a full-time butcher, and those educational institutions like the Northern Alberta Institute of Technology and high schools who buy meats essentially for instructional purposes. They also stated that, since the carcass buyers use a standardized grade system, buying is made considerably easier.

Most of the institutional buyers stated that they have rigid buying specifications and will accept only A and B grade carcasses and that they will not purchase other grades of meats, especially beef, regardless of any price differentials or relative discounts that might exist in a market at a particular time.

Many institutions, by choice or necessity, do not buy complete carcasses but order the number of loins, ribs, hips, and chops they need for their particular purpose. As one institution's official put it: "Breaking the carcasses down into primal cuts at the packer level allows all end-users equal access to the beef they want at the packer level without buying the entire carcass." Seven institutions found specific advantages in buying over 10 per cent of their beef as primal cuts, while nine institutions bought all their pork as primal cuts.

By far the most popular cut with institutions was the portioned cut. Twenty-eight institutions bought various proportions of their beef as portioned cuts, 15 institutions bought all their veal, 10 institutions all their lamb, 24 institutions all their pork, and 17 institutions all their poultry, as portioned cuts.

Important specific advantages stated for buying primal and/or portioned cuts were lower costs, packers being more efficient, less fat content (exact meat content desired), and reduction of kitchen

labour costs. In the case of chickens, the surveyed institutions stated cut-up pieces make serving easy. They also indicated that extra processing of the carcass in the case of beef and pork shifted labour from the institutions' kitchens to the packing plant and improved efficiency in the cutting process. One official remarked: "It's easier to cut carcasses in a production line at the packing plant and the cuts are more consistent." The various cuts--primal and portioned--that are obtained from the carcasses of beef, pork, veal, and lamb are shown in Appendices D2 to D5.

Factors for Buying Most Frequently Bought Meat Cuts

A frequency distribution of institutions' ranking of factors for buying most frequently bought meat cuts is shown in Table 7.10. "Less fat content" was considered the most important factor. Fifteen institutions ranked the factor as number 1, fourteen ranked it as number 2, and four ranked it as number 3. The next most important factor stated by the surveyed institutions is that most frequently bought meats usually reduce kitchen labour costs with regards to cutting the meats to desired portion sizes. Thirteen institutions ranked this factor as number 1, eleven ranked it as number 2, while six ranked it as number 3. The third most important factor stated is that the type of meat cuts bought are usually obtained at lower cost. Other important reasons given are that the cuts bought make buying and serving easy, provide fresher product, are more efficiently cut by packers or processors, and are good for instructional purposes.

A chi-square test of goodness of fit was performed on the frequency table to determine whether there is any clearly interpretable

TABLE 7.10

FREQUENCY DISTRIBUTION OF SURVEYED INSTITUTIONS' RANKING OF FACTORS FOR BUYING MOST FREQUENTLY BOUGHT MEAT CUTS[1]

Factors for Buying Most Frequently Bought Meat Cuts	Ranks[2]						Weighted[3] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	1	2	3	4	5	6 or no rank		
	Institutions Reporting							
Lower cost of meat	18	4	7	4	4	20	3.56	3
Reduces kitchen labour cost	13	11	6	8	3	16	3.44	2
Less fat content	15	14	4	6	6	12	3.33	1
Packers more efficient at cutting	2	6	12	11	3	23	4.33	5
Makes buying easy	5	8	11	8	10	15	3.96	4
Provides fresher product	2	6	5	6	9	29	4.77	7
Lack of adequate storage capacity	0	6	5	9	7	30	4.88	8[4]
Makes serving easy	5	2	10	4	7	29	4.63	6
For instructional purposes	3	1	0	0	0	53	5.67	9[4]
Government buying policy	0	0	0	1	0	56	5.96	11[4]
Less shrinkage	0	1	1	1	0	54	5.84	10[4]

1 Based on responses of 57 institutions that buy most of their meats fresh.

2 The ranks, and grand ranking by all institutions, are in descending order of magnitude, i.e., the lowest number represents the highest rank, the highest number, the lowest rank.

3 Weighted average of the ranks is computed as $\Gamma\omega = \frac{\Sigma rx}{\Sigma x}$, where r = ranks, and x = institutions reporting.

4 Ranks 8, 9, 10, 11 are collapsed under one factor "other" for χ^2 test because of the relative unimportance of each and to avoid their inflating the value of χ^2.

pattern of ranking the factors considered in buying most frequently bought meat cuts. The hypothesis that there is no interpretable pattern of ranking was rejected at 0.05 level of alpha. It is therefore concluded that institutions consider the factors for buying meat cuts according to how they are ranked in the table and that price is stated not the most important factor considered by institutions for buying most frequently bought meat cuts.

It should be noted that the factors given did not relate to a specific type of cut but to all types of meat cuts which are most frequently bought. Thus, some factors may be pertinent to portioned cuts while some may be relevant for buying carcass or primal cuts.

Use of Meats in Various Forms of Preparation

Analysis of data from the survey showed evidence of little use of prepared (convenience) foods, especially meats, in the surveyed institutions (Table 7.11). Only 5 of the 63 institutions surveyed used convenience foods (hot meals), while 3 of the 5 institutions had no more than 10 per cent of their total meals in this form. However, one institution reported that 90 per cent of its meals are in convenience form.[1] A relatively higher number of institutions--13 of the 63 institutions, or 20 per cent--have some proportion of their meats purchased in pre-cooked frozen form. However, 8 of the 13 institutions have no more than 20 per cent of their meats in such

[1] Recording only one institution as having 90 per cent of its meals served in convenience form may not show the degree to which convenience foods are used in institutions since the one institution represents an aggregate of 17 employee cafeterias catered by a food management company. Data on the cafeterias were provided on an aggregate basis, and hence were so recorded.

TABLE 7.11

FREQUENCY DISTRIBUTION OF SURVEYED INSTITUTIONS BUYING VARIOUS PROPORTIONS OF MARKET FORMS OF MEATS

Market Forms of Meat	Percentage of Each Market Form of Meat Purchased												Number of Institutions Reporting
	5	10	20	25	30	40	60	70	80	90	95	100	
Convenience food (hot meals)	1	2	0	0	0	0	0	1	0	1[1]	0	0	5
Pre-cooked frozen meat for reconstitution	3	3	2	1	1	1	0	0	1	1	0	0	13
Fresh meats	2	2	1	0	0	0	1	1	2	6	2	46	63

[1] The one institution represents an aggregate of 17 employee cafeterias catered by a food management company. Thus, in essence, 17 institutions did actually have 90 per cent of their meats in the convenience food form or the catered form.

form. Therefore, the most commonly purchased form of meat is evidently fresh meat. Of the 63 institutions surveyed, 46, or 73 per cent, purchased 100 per cent of their meats as fresh products. In a more generalized description, 58 of the 63 institutions, or 92 per cent, purchased 60 per cent or more of their meats in the fresh form, while only 5 institutions, or 8 per cent, purchased between 5 and 20 per cent of their meats fresh.

Contrary to trends reported in the literature with regard to the use of the "new market forms of food" in institutions in the United States and to some extent in eastern Canada, Alberta institutions seem somewhat traditional in their attitude towards the use of convenience foods and acceptance of modern institutional catering. The major stated reasons given were:

1. The quality and taste of fresh foods have not been incorporated into convenience foods.
2. Uncertainty exists regarding the quality of meats prepared and the handling of the products from source to consumer.
3. It is cheaper and more convenient to operate a kitchen.
4. Cooking is used as a learning experience for residents, while meats are purchased for instructional purposes.
5. Convenience foods are not adaptable to the special diets and programs necessary for the institution.

Other reasons, such as government policy, desire to cook institution's food "family-style," and lack of interest in convenience foods were reported as deterrent factors. The reasons seem inconsistent with the reported impact of advanced food technology as time-saving, cost-saving, labour-reducing, and providing quality food

service.[1] Marston, of the School of Hotel and Food Administration at the University of Guelph, however, agrees with some of the reported reasons.[2] He argues that although convenience foods do save time in preparation, there are doubts about the alleged cost-saving characteristics of this type of food service. Marston said: "Claimed savings are illusory, because people are still required to prepare the foods."

A rank ordering of the reasons reported by the surveyed institutions not using a catered food system was made. The reasons and the rankings given are shown in Table 7.12. Lack of taste for catered meals proved to be the most important reason with 27 institutions ranking it as number 1, while 21 ranked it as number 2, and 14 ranked it as number 3. The second most important reason is that institutional meat buyers were uncertain about the hygienic conditions under which convenience foods are prepared. Only 4 institutions ranked the factor as number 1, but 18 ranked it as number 2, while 21 ranked it as number 3. The third most important factor was that convenience foods are not adaptable to the special diets and programs necessary for the institutions. This reason was often given in hospitals and nursing homes where various special diet meals are required almost daily for patients. Many adult and children's homes where eating habits

---

[1] See: (a) "Hospital's Demand for Top Quality Meats Met by Pre-Cooked Frozens," Quick Frozen Foods, Vol. 35, August 1972, pp. 49-51.
(b) "Frozen Meals, Individually Prepared in Foil Packs, Cut Costs by 35% [Warren Air Force Base]," Quick Frozen Foods, Vol. 33, May 1971, p. 72.

[2] "Convenience Food Concept Great--But Technologists Must Improve the Product," Food in Canada--Meat Industry Report, July 1972, p. 28.

TABLE 7.12

FREQUENCY DISTRIBUTION OF SURVEYED INSTITUTIONS' RANKING OF REASONS FOR NOT USING CATERED FOOD SERVICE[1]

Factors for Not Using Catering	Ranks 1	2	3	4 or no ranks	Weighted Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	Institutions Reporting					
Not suitable for our diet and program	12	10	9	26	2.86	3
No taste for it	27	21	9	0	1.68	1
Uncertainty about sanitary conditions	4	18	21	14	2.78	2
Uncertainty about quality of meat served	2	12	8	35	3.33	4
Cheaper to operate kitchen	5	3	7	40	3.37	5
More convenient to operate kitchen	8	6	2	41	3.33	4
Cooking used as a learning experience	7	0	1	49	3.61	7[2]
Catered food quality unsatisfactory	4	4	3	46	3.60	6
We've never tried catered food	0	0	0	57	4.00	9[2]
Government policy	2	0	0	55	3.89	8[2]

[1] Based on responses of 57 institutions not using catered food service.

[2] Ranks 7, 8, and 9 were collapsed under one factor, "other", for χ^2 test because of the relative unimportance of each of them, and to avoid unnecessary inflation of the χ^2 value.

are family-like also found convenience foods unsuitable.

Other reasons stated by various of the surveyed institutions are that there was no way of determining the quality of meats in convenience foods, that it is cheaper and more convenient to operate an institution's own kitchen, and that cooking is used as a learning experience for residents in the institution.

A chi-square test of goodness of fit at 0.5 per cent level supports the rankings of the factors as shown in the table. It is therefore concluded that the surveyed institutions' stated perceptions of their non-use of the catered foods are due mainly to the fact that they cannot find the same quality and taste of fresh foods in convenience foods, and that the institutional consumers are skeptical about sanitary conditions under which convenience foods are prepared.

To provide a clearer understanding of the use of catered food systems in the six institutions, the food management official in each institution serving catered food was asked to rank the suggested reasons below according to how he perceived the reasons to be according to the order of importance. The following is a list of the reasons considered:

1. No kitchen facilities.
2. Catering is adaptable to menu changes.
3. Catering reduces kitchen labour costs.
4. Catering avoids waste.
5. No local kitchen management expertise.
6. Catering provides more consistent and quality food service.
7. For convenience.

TABLE 7.13

RESPONSE FREQUENCIES OF SIX INSTITUTIONS' RANKING OF FACTORS FOR USING CATERED FOOD SERVICE[1]

Factors for Catering	Ranks[2] 1	2	3	4	5 or no rank	Weighted Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	Institutions Reporting						
No kitchen facilities	2[3]	0	0	0	4	3.67	5
Catering is adaptable to menu changes	1	0	2	2	1	3.33	3
Catering reduces kitchen labour costs	1	3	0	2	0	2.5	1
Catering avoids wastes	1	1	3	0	1	2.83	2
No local kitchen management expertise	0	1	1	4	0	3.5	4
More consistent and quality food service	0	1	0	0	5	4.5	7
For convenience	1	0	0	0	5	4.3	6

[1] Based on responses of 6 institutions using catered food service.

[2] The ranks and grand ranking by all institutions are in descending order of magnitude; i.e., the lowest number represents the highest rank, the highest number, the lowest rank.

[3] One of the two institutions represents an aggregate of 17 employee cafeterias catered by a food management company. Thus, in essence, 18 institutions did actually rank "No kitchen facilities" as No. 1 factor for using catered food system. The grank rank of 5 given to the factor thus did not accurately show the effect of "No kitchen facilities" for the use of catered foods in these institutions.

"Catering reduces kitchen labour costs" tops the list in importance, with one institution ranking it as number 1, and three institutions ranking it as number 2, while three institutions ranked it as number 3 (Table 7.13). The second factor in importance is "catering avoids waste," with one institution ranking it as number 1 and one as number 2, while three institutions ranked it as number 3. "Catering is adaptable to menu changes" ranks third in overall standing. Other factors appear to be of less importance according to the rankings.

Summary

In summary, food management officials range from non-skilled or specialized persons in food service, such as clerks, cooks, registered nurses, group home parents, to highly skilled professional people such as dieticians, chefs, and food production supervisors or managers. However, it is only in the hospitals that the full services of dieticians are employed. Various types of feeding operations are used in institutions but the most commonly used is the conventionally operated kitchen, with very small proportion of the institutions using the services of food management firms.

Most institutions bought the greater proportion of their meats as portioned cuts. However, the institutions who employ their own butchers found advantages in buying carcasses, while carcasses were also bought by some colleges for instructional purposes. Analysis of data from the survey showed little use of prepared (convenience) foods, especially meat dishes, in institutions. Most important reasons given

were lack of taste for convenience foods, uncertainty about sanitary conditions during meal preparation and meat quality in convenience foods, and that it was more convenient to operate an institution's kitchen. The institutions who use catered foods, however, do so mainly because of lack of kitchen facilities in the institutions, and because convenience foods reduce kitchen labour costs and avoid waste.

CHAPTER VIII

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

The focus of this chapter is to (1) summarise the results of this investigation and present the conclusions drawn therefrom in terms of major objectives and hypotheses, and (2) delineate some problems arising from the study and recommend possible pertinent future research.

Summary of Findings and Conclusions

The general aim of this study was to provide information on meat purchasing practices in the institutional market. However, the specific objectives were to: describe meat buying strategies employed by surveyed institutional meat buyers; develop and interpret information on the supply sources and flows of meats to these institutions; determine the type, quantity and the value of meats used by the surveyed institutions; and, lastly, identify the various market forms of meats at different stages of processing used by the surveyed institutions.

The following findings are discussed with regard to the major objectives and related hypothesis.

Meat Procurement Methods

Hypothesis 1. The null hypothesis that there is no relationship between the size of an institution and the procurement method used for

meat purchases was postulated and tested. The hypothesis was intended to determine whether there was a correlation between large institutions and use of the competitive bid buying and negotiative buying methods on one hand, and the use of the spot buying method by small institutions on the other. Results showed that there was a correlation between the size of the institution and the method of meat procurement used. Large institutions tended to use the tender and bid and the negotiative buying methods, while the small ones used the spot buying method.

Purchases made via the tender and bid and the negotiative methods were usually backed by contracts. However, the surveyed institutions stated that they were reluctant to be locked into long term contracts except when they believed that prices would rise. Institutional meat buyers surveyed, especially the small volume buyers, stated that they tended to change their suppliers less often than the larger ones who always used the volume of their purchases to secure low price concessions from any supplier.

With regards to pricing, the surveyed institutional meat suppliers indicated that prices of individual meat cuts varied and followed the pattern of price fluctuations observed at the retail market. They also stated that pricing policy in the institutional market was affected by the supply of meat items demanded by institutions and the necessity that suppliers make some margin over costs. These two factors were stated to be the most important price-making variables.

Meat suppliers surveyed indicated that they used various bargaining tactics during negotiation. The large suppliers reported that the most frequently used strategies were special product processing and

established brand names. These sellers also reported frequent use of volume sales of meats at discount prices to promote sales to institutions.

Conclusion. The most frequently used methods of buying meats by the surveyed institutions are the spot buying, the tender and bid buying, and the negotiative buying methods. Larger institutions tend to use the competitive bid and the negotiative methods, while the smaller institutions tend to use the spot buying method.

With regards to purchasing strategies, large institutional meat buyers stated that they tend to counteract the powers of large packers during bargaining by emphasizing uniform quality products, dependable service, and lower price. Also, a particularly noticeable purchasing policy which has evolved among the small institutions is the use of a centralized purchasing system and a cooperative buying mechanism to elicit price reductions from large suppliers.

Supply Sources and Distribution Channels

Hypothesis 2. It was hypothesized that a proportion (more than 8 per cent) of menu items consumed at institutions originated from foreign sources. An analysis of origin of meats consumed in institutions supported this hypothesis with regards to beef, veal, and lamb. Based on data available from five institutional meat suppliers, a relatively higher proportion of beef from Australia, New Zealand, and United States was estimated to be consumed in the institutions than in Canada as a whole. Estimated figures showed that Oceanic sources (Australia and New Zealand) accounted for 16 per cent of total beef

used, while United States accounted for 3 per cent. Of total beef consumed in Canada, Oceanic beef imports accounted for only 5 to 8 per cent--a figure below the 16 per cent used in institutions.

A survey of popular menu items in institutions showed that very little of the heavy expensive cuts from the United States were used in the institutional segment of the HRI market. Beef originating from New Zealand and Australia tended to be used for ground beef, hamburger patties, and manufactured meats. Available data from five supplying firms also showed that a great proportion of veal and 94 per cent of lamb used in institutions was grown in New Zealand and Australia. Only 25 per cent of veal supplied to institutions was produced in Alberta, while 5 per cent came from Ontario. The stated reason given by suppliers for beef and veal importation was the relatively lower price of imported beef as compared with its Alberta equivalent. However, with regards to lamb and pork, consistently short supplies of Alberta produced varieties of the meats were stated by the surveyed firms as the dominant reason for importing them.

Estimated figures based on data from five supplying firms showed that Alberta was the dominant source of beef, pork, and poultry consumed in the institutions. Alberta beef supplies to the institutions were low-price cuts and were delivered to institutions as fresh meats in the form of shoulder pot-roasts or steaks, short-ribs, stew beef, corned brisket, ground beef and beef patties.

Pork was consumed in the institutional segment of the HRI market more than in the hotel and restaurant segment. However, the surveyed institutional consumption ratio of 1 to 2 for pork and beef is less than the national per capita ratio of 1 to 1.5.

The four larger packing houses--Swift Canadian, Burns, Canada Packers, and Gainers--predominated as suppliers of meats to the surveyed institutions. The four firms combined shared approximately 75 per cent of all meats sold to the institutions surveyed. This percentage was identical to their share (74 per cent of Alberta's kill) of federally inspected slaughter in Alberta in 1976. The smaller packers or processors found markets with small institutions and with large institutions who desired their meats in portioned sizes. The small packers were also stated to be more reliable for emergency supplies, cooperation, service, and uniform quality cuts by many institutions.

Direct marketings by the large packers and their branch houses constituted the largest channel of meat flows into surveyed institutions. Direct marketing accounted for approximately 86 per cent of total sales to institutions, while indirect sales through processors and independent wholesale distributors accounted for the remaining 14 per cent.

A variety of factors, price and non-price alike, were reported to be criteria considered by the institutions for selecting and retaining their suppliers. The non-price factors--dependable service and uniform quality--were reported by institutions to be the most frequently considered factors. The lowest-price-of-meats factor was believed subsidiary, while consistency and dependability in both product and service were considered crucial in selecting and cancelling suppliers.

A graphical illustration of price-quantity relationship based on a time-series data provided by a large hospital, however, showed that the price factor was taken into consideration in the purchase of beef,

pork, and lamb, but not for veal and poultry. More quantities of beef, pork, and lamb appeared to be bought as their prices fell.

Conclusion. The institutional market seems to be a steady and ready haven for imported meats since 16 per cent of the institutions' menu items comprise meats (especially beef, veal, and lamb) which are imported. Also, meat prices do not frequently fluctuate in the institutional market owing to contract arrangements and the practice of buying meats based on a somewhat inflexible menu pattern.

Similarly, since in some cases the lowest-price supplier of a meat cut may not necessarily be selected by an institution as its supplier, as stated by the surveyed institutions, it is apparent that price competition is not as frequently used as non-price competition in cases where taste and variety factors take precedence over price.

The institutions surveyed appear to be a reliable and steady market for hog producers since the quantity of pork consumed in them in relation to beef stands at a ratio of 1 to 2. This is higher than the ratio of 2 to 10 reported for all pork eaten away from home, but is less than the national average ratio of 1 to 1.5 estimated for Canada during the past ten years.

Quantities and Values of Meats Purchased

Hypothesis 3. The type of institution was found to significantly influence the quantity of meat types bought by each institution. Welfare homes, penal institutions, and in-plant/in-office cafeterias used little or no veal and lamb, while beef, pork, and poultry were the most commonly bought types of meats. The proportion of poultry

used in hospitals and nursing homes was higher than in any other type of institution, and only the universities, colleges, and hospitals used veal and lamb in the institutions surveyed.

Classification of meats according to type showed that beef, veal, pork, lamb, and poultry were all used in institutions in various proportions. However, the most popular type of meat bought was beef, which accounted for almost half (47 per cent) of the total quantity of meats used. Pork ranked second with 25 per cent, and poultry third with about 20 per cent. A relatively smaller proportion of veal and lamb were used, with each accounting for about 4 per cent of total meat used.

The above quantity proportions recorded for the types of meats were similar to the proportions obtained when the value of purchase was used as a unit of measure. The value proportions of beef and poultry were less than their quantity proportions, while those of lamb and veal stayed approximately the same. The value share of pork (29 per cent) was higher than its quantity estimates, an indication of the relatively higher price of pork per unit of weight than other types of meats.

Ground beef (including hamburger patties) was used more than other beef meats, accounting for almost one-third of all beef used. Light, low-priced steaks came second, while roast was third. The use of cured and processed beef was also highly noticeable. Ham topped the list of other red meats, accounting for 39 per cent of all pork used. Chicken fryers and turkey roasts were the most popular poultry items on the menu, while veal and lamb cutlets were used as variety meats. Veal and lamb were not used much. Stated reasons were the

lack of taste, high relative prices and unavailability of adequate and regular supplies.

Use of convenience foods was limited. Most institutions stated that they liked to purchase their meats fresh or frozen rather than prepared. Tastes of institutional consumers and culture were stated to be the two most important underlying reasons for buying the types of meats consumed, while the low price of a type of meat was not stated to be a strong factor. Graphical illustration of time-series data for one large hospital showed, however, that price was important in buying beef, pork, and lamb, at least in the long run (Appendices F1 to F6).

Conclusion. Certain types of institutions appear to be markets for certain types of meats. The hospitals and nursing homes, and the universities and colleges are good markets for poultry, while the welfare homes and institutions, penal homes, in-plant/in-office cafeterias, schools and day care centres are poor markets for veal and lamb since these institutions consume little or none of the products. The food service policies of these latter groups of institutions are often to feed the residents adequately without providing expensive variety.

Utilization Practices and Food Service Practices

Hypothesis 4. Less fat content was stated to be the most statistically significant factor for buying most frequently bought meat cuts. Next in importance was that most frequently bought meat cuts reduced kitchen labour costs, and a third stated reason was that

the cuts were usually obtained at lower prices. Based on the stated opinions of the respondents, the hypothesis that the price of a meat cut is the most important factor considered by institutions for buying most frequently bought meat cuts was therefore rejected but, in actual practice, the surveyed institutions appeared to act otherwise.

Most institutions bought the greater proportion of their meats as portioned cuts. However, some institutions employed their own butchers and found advantages in buying carcasses, while carcasses were also bought by some colleges for instructional purposes. Few convenience foods (meats) were employed in institutions. The stated reasons given for this lack of use were the lack of taste for it, uncertainty about the quality of meat in convenience foods, and that it was more convenient to operate a kitchen.

The types of feeding operations used in institutional food service comprised conventionally operated kitchens managed by the institutions themselves, kitchen operations contracted out to food management companies, and the catered or convenience food system. The most commonly used of the systems, however, was the conventionally operated kitchens managed by the institutions themselves, while only a small proportion of the institutions used the services of food management firms. Institutions which used the catered or the convenience food system did so because they had no boarders, no kitchen facilities, or they found it cheaper and more convenient to do so.

Surveyed food management officials ranged from non-skilled or specialized persons in food service, such as clerks, cooks, registered nurses, or group home parents, to highly skilled professional people, such as dieticians, chefs, and food production supervisors or managers.

Only in the hospitals were the full services of dieticians employed.

Menu cycles in the institutions surveyed varied from daily patterns to six month cycles. However, the most prevalent cycles were the four-week and the six-week cycles. In essence, institutional meat buyers' responsiveness to meat prices would appear to be influenced by menu cycles.

Conclusion. Institutional meat buyers appear to be somewhat responsive to price for certain types of meats, i.e., beef, pork, and lamb. But for other types of meats, such as veal and poultry, institutional meat buyers would seem to be more concerned with taste and variety factors than with price in their purchasing and utilization patterns of these types of meats, especially in the very short run.

The study revealed some evidence of changing trends in food purchasing and management concepts, especially the use of catered foods, the system of contracting kitchen operations to some companies, the cooperative buying system, and the centralization of orders under a central purchasing agency. However, conflicting opinions exist with regards to the appropriate food operation system and meat utilization practices as a means of reducing costs.

Suggestions for Future Studies

In view of the fact that this study looks at purchasing conduct in the institutional meat market in a general sense, it is suggested that additional efforts be made to test some of Bain's hypotheses regarding structure-conduct relations. In this context, studies would be necessary to provide information on factors such as sizes of

institutions and meat suppliers, and the differentiated meat products traded, as they influence established prices. In that condition, efforts could be channelled towards investigating the hypothesis that negotiative relations can be characterized by some degree of bilateral oligopoly.

Also, to understand the ultimate performance implication of meat purchasing conduct at the institutional level, it would be helpful to compare spot buying, bargaining, and tender and bid buying as three price-determining purchasing procedures. In this context, information or data on buyer-seller preferences for meats, established prices, delivery periods, and other buying habits would be helpful. Such a study would provide information as to whether or not bargaining or negotiation as a mechanism for trading meats lessens instead of promotes price competition in the institutional market.

Because the findings in this study indicated an apparent need for more adequate data from institutions and their meat suppliers, a management information-feedback model is recommended. The model can be used to compile current and accurate data that can assist food administrators as well as food (meat) processing and packing firms to better understand food procurement phenomena, food product development, distribution, and utilization. Conflicts between stated perceptions by institutional meat buyers and suppliers and existing realities in purchasing patterns in the institutional market could be better resolved by availability of detailed and reliable data from the data bank on various conduct dimensions. For example, prices by commodity type over time would aid in establishing the degree of price responsiveness and also of cross substitution among products by

institutions in their purchasing habits.

Finally, since this study covers a narrow segment of Alberta Province, it is recommended that efforts be made to extend the geographic study area to the provincial boundaries in any future study of the institutional market. Such efforts would provide opportunities to refute or support the findings in this study. Results from such a study will also be less restrictive in their use as a basis for policy decisions than the current ones since a number of major meat suppliers to institutions are regional or national in scope.

BIBLIOGRAPHY

BIBLIOGRAPHY

Agriculture Canada. The Canadian Pork System. Ottawa: Food Systems Branch, April 1977, p. 87.

Agriculture Canada. Handbook of Food Expenditures, Prices and Consumption. Ottawa: Economics Branch Publication, Number 75/6, May, 1975.

Alberta Department of Agriculture. Agricultural Processing and Manufacturing Guide. Edmonton: 1977.

Alberta Department of Agriculture. Report on Survey of Food Establishments. Edmonton, Alberta: Agricultural Marketing Division.

Alberta Department of Agriculture. Report on Institutional Buying Patterns and Marketing Channels. Edmonton, Alberta: Nutrition and Food Marketing Section, 1974.

Alberta Education. The Seventy-First Annual Report, April 1, 1975 - March 31, 1976. Edmonton: Government of Alberta, 1977.

Alberta Hospital Services Commission. Annual Report for the Year Ended December 31, 1975. Edmonton, Alberta: 1975.

Alberta Social Services and Community Health. Annual Report 1974-75. Edmonton, Alberta: Alberta Social Services and Community Health, 1975.

Anderson, K. and Hoofnagle, W. The Market for Food in Public Schools. Research Report No. 377. Washington, D.C.: United States Department of Agriculture, 1960.

Araullo, E. V. "Food Purchasing and Utilization Patterns in Wisconsin Hospitals : Meats, Poultry, and Fish." Unpublished Ph.D. Thesis, Department of Agricultural Economics, University of Wisconsin, 1971.

Avery, Arthur C. "Secrets of Food Purchasing." Food Management, Vol. 11, No. 9, September 1976, p. 59.

Bartlett, M. S. "The Use of Transformations." Biometrics, Vol. 3, 1947, pp. 39-52.

Berberoglu, H. Restauranteurs and Hoteliers Purchasing Book. Burlington, Ontario: Canadian Business Services Ltd., 1976.

Cochran, W. G. "Some Consequences when the Assumptions for the Analysis of Variance are Not Satisfied." Biometrics, Vol. 3, 1947, pp. 39-52.

Cochran, W. G. and Cox, G. M. Experimental Designs. 2nd Edition. New York: John Wiley and Sons, Inc., 1957.

Cochrane, Willard. "The Market as a Unit of Inquiry in Agricultural Economics Research." Journal of Farm Economics, Vol. 19, 1957, p. 22.

Cropp, R. "Economic Analysis of Marketing Potential for Sterilized Milk Concentrate in Institutional Markets." Ph.D. Thesis, Department of Agricultural Economics, University of Wisconsin, 1971.

Cropp R., Moede, H. R., and Graf, T. Milk Consumption and Food Patterns in Selected Eastern and Midwestern Institutions. Marketing Research Report No. 800. Washington, D.C.: United States Department of Agriculture, 1967.

Dawson, Jim. "Canada's Beef Trade." Unpublished report. Edmonton, Alberta Department of Agriculture, 1977.

Department of Manpower and Immigration. Canada Occupational Forecasting Program, No. 1 : Canada (excluding occupations generally requiring post-secondary education). Ottawa: 1975.

Dodd, H. "Canada Gains in HRI Trade." Cattlemen--The Beef Magazine, March, 1976, p. 10.

Edwards, Allen L. Statistical Methods for the Behavioral Sciences. New York: Holt, Rinehart and Winston, 1962.

Faminow, M. D. "Beef Procurement by Edmonton Restaurants." Unpublished M.Sc. Thesis, Department of Rural Economy, University of Alberta, Edmonton, 1977.

Food Management, Vol. 10, No. 10, October 1975.

Foodservice and Hospitality Estimate. Canada's Hospitality Business--The Fact File. 2nd Edition. Toronto: Food Service and Hospitality, 1977.

Friese, J. C. "Professional Purchasing Techniques--School and College." Food Management, Vol. 6, No. 7, 1970, pp. 16-20.

Galbraith, J. K. American Capitalism : The Concept of Countervailing Power. Boston: Houghton Mifflin, 1956.

Gnauch, B. "An Economic Analysis of Market Conduct in Five Agricultural Input Industries." Ph.D. Thesis, Department of Agricultural Economics, University of Minnesota, Minneapolis, 1968.

Hawkins, M. H. and McCormick, R. "The Australian Beef Industry : Report No. 10." Unpublished report to the Alberta Government, Edmonton, 1976.

Hoofnagle, W., Dwoskin, P., and Bayton, J. The Market for Food in Selected Public and Private Institutions. Marketing Report No. 84. Washington, D.C.: United States Department of Agriculture, 1955.

Institutions/Volume Feeding, Vol. 68, April 15, 1971, pp. 39-61.

Institutions/Volume Feeding, Vol. 73, No. 3, August 1, 1973, pp. 23-28.

Institutions/Volume Feeding, Vol. 75, October 15, 1974, p. 89.

Institutions/Volume Feeding, Vol. 75, November 15, 1974, p. 35.

Irwin, E. R. and Keller, F. "A Meal Pattern System Coordinated for Different Institutions." Hospitals, Vol. 43, No. 21, 1969, pp. 104-107.

Kirtley, M. B. "A Survey of Meat Use in Restaurants in a Major Metropolitan Area of the United States Food Service." Research Digest, National Restaurant Association, Winter 1964-1965.

Kohout, Frank J. Statistics for Social Sciences. New York: John Wiley and Sons, Inc., 1974.

Kotler, Phillip. Marketing Management--Analysis, Planning and Control. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976.

Kotschevar, L. H. Management by Menu. Chicago, Ill.: National Institute for the Food Service Industry, 1975.

Kotschevar, L. H. Quantity Food Purchasing. 2nd Edition. New York: John Wiley and Sons, 1975.

Lifquist, R. C. Expenditures for Processed Foods by Employee Food Service Manufacturing Plants. Research Report No. 458. Washington, D.C.: United States Department of Agriculture, 1961.

Lifquist, R. C. Buying Practices of Food Use of Employee Food Service in Manufacturing Plants. Marketing Research Report No. 321. Washington, D.C.: United States Department of Agriculture, 1959.

Lowrie, W. W. "Preliminary Report on the Proposed Alberta Food Corporation." Unpublished Report, Edmonton, Alberta Agriculture, Statistics Branch, 1976.

Marshall, R. G. "Beef and Pork in Canada : Demand, Supply and Trade." Paper to the Food Price Review Board, Ottawa, June, 1974.

Mertens, M. M. and Donaldson, B. "Factors Affecting Main Dish Menu Variety in Wisconsin School Lunch Programs." Journal of Home Economics, Vol. 56, No. 6, 1964, pp. 411-412.

Nicholson, Walter. Microeconomic Theory--Basic Principles and Extension. Hinsdale, Illinois: The Dryden Press Inc., 1972.

Papandreou, H. and Wheeler, J. Competition and Its Regulations. New Jersey: Prentice-Hall, Inc., 1954.

Peltz, Robert. "Union Voice No Objection to Use of Frozen Foods in Institutional Operation." Quick Frozen Foods, Vol. 34, January 1972, p. 53.

Quick Frozen Foods, Vol. 33, May 1971, p. 72.

Quick Frozen Foods, Vol. 34, January 1972, p. 51.

Quick Frozen Foods, Vol. 34, June 1972, pp. 47-48.

Quick Frozen Foods, Vol. 35, August 1972, p. 49.

Quick Frozen Foods, Vol. 35, December 1972, pp. 31-36.

Rainsford, Peter. "Pre-cooked Frozen Entrees : A Comparison of Reconstitution Techniques." The Cornel Hotel and Restaurant Association Quarterly, Vol. 16, No. 1, May 1975, pp. 64-69.

Ryan, J. R. "The Inconvenience of Convenience Foods." Cooking for Profit, 1969, Vol. 38, No. 220, pp. 42, 46, 48.

Scherer, F. M. Industrial Market Structure and Economic Performance. Chicago, Ill.: Rand McNally College Publishing Company, 1970.

Scitovsky, Tibor. Welfare and Competition. Chicago, Ill.: Richard D. Irwin Inc., 1962.

Smith, Arthur. Food Industry in Canada--Meat Industry Report. Toronto: Maclean Hunter Publication, 1972.

Smith, K. D., Berg, R. T., Hawkins, M. H., Stiles, M. E., and McFadyen, S. C. The New Beef Grades. Edmonton: Rural Economy Bulletin, Applied Research, The University of Alberta, 1975.

Snedecor, G. W. Statistical Methods Applied to Experiments in Agriculture and Biology. 5th Edition. Ames, Iowa: Iowa State College Press, 1956.

Statistics Canada. Consumer Prices and Price Indexes. Cat. No. 62-010, Quarterly.

Statistics Canada. Consumer Price Index. Cat. No. 62-001, Monthly.

Statistics Canada. Construction in Canada. Cat. No. 64-201, Annual.

The Cornel Hotel and Restaurant Administration Quarterly, Vol. 17, No. 1, May 1976, p. 45.

Toronto Globe and Mail, Thursday, October 14, 1976, p. B5.

United States Department of Agriculture. The Food Service Industry : Type, Quantity and Value of Foods Used. (Statistical Bulletin No. 476.) Washington, D.C.: Government Printing Office, November 1971.

Van Dress, M. G. Estimated Number of Day's Supply of Food and Beverages in Establishments that Serve Food for On-Premise Consumption--A Civil Defence Study. Marketing Research Report No. 707. Washington, D.C.: United States Department of Agriculture, 1965.

West, B. B., Wood, L., and Harger, V. F. Food Service in Institutions. 4th Edition. New York: John Wiley and Sons, Inc., 1965.

Willemsen, Eleanor Walker. Understanding Statistical Reasoning. San Francisco: W. H. Freeman and Co., 1974.

Winter, George R. Conduct in Canadian Food Marketing. Ottawa: Agricultural Economics Research Council of Canada, 1969.

APPENDICES

APPENDIX A1

QUESTIONNAIRE ON MEAT PURCHASING PATTERNS BY INSTITUTIONS

(The Tested Draft)

INSTITUTIONAL MEAT MARKET SURVEY
DEPARTMENT OF RURAL ECONOMY
UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA

1. INSTITUTION: Name _____

Address _____

_____

Contact Name and Position _____

Type of Institution _____

Function of Institution _____

_____

2. MEALS SERVED: No. of Hot meals per week _____

No. of students, patients or beds, etc. _____

No. of staff _____

Do your institutions have self-operated kitchens for food services: Yes ____ No ____

Types of Meals: Breakfast _____ Lunch _____ Dinner _____

Contracted out food service or catered _____

Other _____

If catered why do you choose the system of food service?

_____

_____

3. PROCUREMENT:

What types of meats do you buy and what percentage of total meats does each account for?

Meat types	Percent (%) of Total Meat Bought
Beef	_____
Veal	_____
Lamb	_____
Pork	_____
Poultry	_____

For each type of meat what specifications do you buy? Please mark by "✓".

SPECIFICATIONS				
Type of Meat	Whole Carcass	Primal Cuts, Sides Hinds, Legs, etc.	Convenience Packed Cuts (Fresh)	Frozen Packed Standard Cuts
Beef	____	____	____	____
Veal	____	____	____	____
Lamb	____	____	____	____
Pork	____	____	____	____
Poultry	____	____	____	____

Why do you buy the types of cuts you buy most? Please mark the reasons suggested below by "✓".

(a) Lower cost of meat _____

(b) Reduces kitchen labour cost _____

(c) Less fat content (exact meat quantity desired) _____

(d) Packers or processors more efficient _____

(e) Makes buying easy _____

(f) Fresher product _____

(g) Lack of adequate storage capacity _____

(h) Makes serving easy _____

(i) Other _____, explain _____

BEEF

What quantity used per week _____ lbs.

Grades? Red _____ Blue _____ Commercial _____

Is buying by these grades satisfactory? Yes ____ No ____

Why? _____

Would you like to buy more portion cuts? Yes ____ No ____

Why? _____

Would you buy convenience items? e.g.

Swiss Steaks, Cooked Roast? Yes ____ No ____

Single portions? Yes ____ No ____

Multiple portions? Yes ____ No ____

What new by-products would you like to see developed?

_____

Are you able to obtain all beef cuts locally? Yes ____ No ____

Why? _____

Comments:

VEAL

What quantity used per week _____ lbs.

Is veal readily available? Yes ____ No ____ Why? _____

_____

Would you buy more portion cuts?

Cutlets? Yes ____ No ____ Why? _____

Roast? Yes ____ No ____ Why? _____

Chops? Yes ____ No ____ Why? _____

Stew? Yes ____ No ____ Why? _____

What new veal products would you like to see developed? _____

_____

Comments:

LAMB

What quantity used per week _____ lbs.

Fresh Canadian _____ lbs. Imported _____ lbs.

Are these products satisfactory? Yes ____ No ____ Why? _____

_____

Would you use more of these if processed differently? Yes ____ No ____

Why? _____

_____

More portion or convenience cuts? Yes ____ No ____ Why? _____

_____

More prepared boneless cuts? Yes ____ No ____ Why? _____

_____

Do you find the selection adequate? Yes ____ No ____ Why? _____

_____

What new lamb products would you like to see? _____

_____

Can you get supplies when you need them from your regular suppliers?

Yes ____ No ____ Why? _____

_____

Do you have adequate preparation and cooking information? Yes ____

No ____ Why? _____

Comments:

PORK

What quantity used per week _____ lbs.

Type: Fresh ____ lbs. Bacon ____ lbs. Ham ____ lbs.

Sausage ____ lbs. Pork loins ____ lbs. Pork Cutlet ____ lbs.

Butts ____ lbs. Pork chops ____ lbs. Bacon loaf ____ lbs.

Are these products satisfactory? Yes ____ No ____

Why? _____

_____

Would you use more pork if processed differently?

Less fat Yes ____ No ____ Why? _____

Boneless Yes ____ No ____ Why? _____

More portion cuts? Yes ____ No ____ Why? _____

Do you find selection adequate? Yes ____ No ____ Why? _____

_____

What new products would you like to see? _____

_____

Comments:

POULTRY

How many meals served per week _____ lbs.

Types of poultry used:

Fryers? Yes ____ No ____ Why? _____

Roasting? Yes ____ No ____ Why? _____

Fowl? Yes ____ No ____ Why? _____

Turkey? Yes ____ No ____ Why? _____

Turkey Broilers Yes ____ No ____ Why? _____

Ducks? Yes ____ No ____ Why? _____

Geese? Yes ____ No ____ Why? _____

Others (Wild Game)? Yes ____ No ____ Why? _____

Would you use more poultry if processed differently? Yes ____ No ____

Suggested Changes: _____

Would you use more pre-prepared portion cuts?

e.g., Boneless Chicken Breasts Yes ____ No ____

Stuffed Drumsticks Yes ____ No ____

Turkey Rolls Yes ____ No ____

Do you have any new-products suggestions _____

_____

Are the products you use readily available on short notice? Yes ____

No ____ Why? _____

_____

Comments:

4. SOURCES OF PURCHASE

If you buy from Alberta which firms do you buy from? Please indicate whether the firm is a packer, processor, distributor, purveyor, or caterer.

Firm's Name	Packer, Processor Distributor Purveyor, Caterer	Meat Types				
		Beef	Veal	Lamb	Pork	Poultry
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

You probably select and retain your meat suppliers on the basis of some factors. Which of the following factors apply to you?

(a) Dependable Service ____
(b) Lower Price ____
(c) Uniform Quantity ____
(d) Reliability ____
(e) Advertising Promotion ____
(f) Community Image or Goodwill ____
(g) Proximity ____
(h) Others ____ Explain _____

_____

You probably buy some meats more often than others for various reasons. Please indicate by "√" the reasons for buying each type of meat.

Type of Meats	Factors for Buying Meats					
	Nutritional Value	Consistently Lower Price	Low Fat Content	Taste	Culture or Food	Easily Obtainable
Beef	____	____	____	____	____	____
Veal	____	____	____	____	____	____
Lamb	____	____	____	____	____	____
Pork	____	____	____	____	____	____
Poultry	____	____	____	____	____	____

5. PURCHASING PATTERN

Do you buy your meats weekly? ____ Monthly? ____ or at what intervals (specify) Why? _____

Which types of meats purchased shown an upward trend over the past two years: Beef ____ Veal ____ Pork ____ Lamb ____ Poultry ____

What reasons do you think account for the upward trend in your quantity purchased?

(a) Price (Increase) ____ (Decrease) ____
(b) Population (Increase) ____ (Decrease) ____
(c) Taste (Increase) ____ (Decrease) ____
(d) Other _____ (specify)

If some downward trends have been observed in the quantity of some meats purchased, indicate which meats and why

Beef ____ Why? _____
Veal ____ Why? _____
Pork ____ Why? _____
Lamb ____ Why? _____
Poultry ____ Why? _____

6. PRICING EFFICIENCY:

Are your purchases and prices on monthly contracts or how often?

_____

Do the purchase prices of your meats vary with each contract purchased (monthly or so) or are they stable over long periods (6 months to 1 year)? _____

_____

If the prices vary with each purchase, why? _____

_____

Could you provide the quantities purchased and the prices of the types of meat cuts bought in a recent month for beef, veal, lamb and poultry?

APPENDIX A1

QUESTIONNAIRE TO SUPPLIERS OF MEATS TO INSTITUTIONS:
PACKERS, PROCESSORS, PURVEYORS, DISTRIBUTORS, ETC.

(The Tested Draft)

INSTITUTIONAL MEAT MARKET SURVEY
DEPARTMENT OF RURAL ECONOMY
UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA

FIRM: Name _____

Address _____

Contact Name & Position _____

_____

Type of Firm: Circle which apply: packer, processor,
meat purveyor, distributor, caterer,
other (specify)

Distribution Channel

Do you sell meat to institutions, i.e., hospitals, colleges and university, correctional institutes, nursing homes, children's homes, etc.

Yes ____ No ____

Is your institutional market local, regional, or national _____

How regularly do you sell meat to institutions: weekly _____

monthly _____, or at what intervals? _____

Are your sales made and prices made on contracts or tender for a period of time, e.g., a month or any time? _____

Are you able to provide the types of meat cuts desired by the institutions?

Yes ____ No ____ Which type and why? _____

_____

What quantities of all meat types do you sell to the institutions per week? Check below:

Meat type		
	Beef	_____ lbs.
	Veal	_____ lbs.
	Pork	_____ lbs.
	Lamb	_____ lbs.
	Poultry	_____ lbs.

Please indicate all other buyers or distributors, i.e., processors, caterers, meat purveyors, etc., that you sell to.

Beef _____

_____

Veal _____

_____

Lamb _____

_____

Pork _____

_____

Poultry _____

_____

What amount (lbs.) or percentage (%) of your sales go to exports, i.e., (out of province) in a year.

Beef _____ lbs. _____%

Veal _____ lbs. _____%

Lamb _____ lbs. _____%

Pork _____ lbs. _____%

Poultry _____ lbs. _____%

Please indicate what quantities of your meats come from Alberta and imports, i.e., out of province and other countries, in a year.

Beef: Alberta _____ lbs. Out of Province _____ lbs. U.S. _____ lbs.
Australian & N.Z. _____ lbs. Other _____ lbs.

Veal: Alberta _____ lbs. Out of Province _____ lbs. U.S. _____ lbs.
Australian & N.Z. _____ lbs. Other _____ lbs.

Lamb: Alberta _____ lbs. Out of Province _____ lbs. U.S. _____ lbs.
Australian & N.Z. _____ lbs. Other _____ lbs.

Pork: Alberta _____ lbs. Out of Province _____ lbs. U.S. _____ lbs.

Poultry: Alberta _____ lbs. Out of Province _____ lbs.

PRICING EFFICIENCY

Are your selling prices of all meat types to the institutions stable over some long period (about 6 months to 1 year), or do they fluctuate from time to time?

Yes ____ No ____

What information or guidelines do you utilize in establishing your selling price for the different types of meats? Is it your cost, availability of supply, or the quantity demanded by the institutions, etc. _____

_____

Do you do volume selling at lower prices or do your prices remain the same regardless of number of pounds of meat sold? _____

_____

Do you advertise your products to the institutions? Yes ____ No ____

If "Yes" what form of advertisement and sales promotion do you use, i.e.,

Brand name _____ T.V. _____ Newspaper _____ Special Package _____

Door to door contact _____ Other _____

Below is a suggested list of cuts that you probably sell at the institutions market, please indicate which you sell by "√".

Meat	Size or Specification or Grade	Monthly Quantity Sold	Unit Price
BEEF & VEAL (whole carcasses)			
Smoked, pickled			
or spiced			
Corned beef			
hip			
brisket			
Smoked			
Pastrami			
Luncheon Meat			
Boneless Bull			
Raw Processed			
Ground beef			
Minced beef			
Shank			
Stewing beef			
Steak & Patties			
Bottom round			
Salisbury			
Veal patties			
Veal cutlets			
Liver			

Meat	Size or Specification or Grade	Monthly Quantity Sold	Unit Price
Portion Controlled Cuts			
Broiling steaks			
Prime ribs			
Braising ribs			
Swiss Steak			
Institutional Cuts			
Boneless cut			
Sirloin-Top and Bottom			
Hams-Inside & Out			
Chucks			
Clods			
Rib Roast			
Hinds & Fronts			
Partly Preserved			
Cooked Beef			
PORK (CCS)			
Smoked, pickled or			
spiced			
Cottage Roll			
Hams			
Bacon			
Sliced rindless			
Back			
Pullman			
Raw Processed			
Sausage meat			
Stuffed Pork Tenderloin			

Meat	Size or Specification or Grade	Monthly Quantity Sold	Unit Price
Portion Controlled Cuts			
Chops (end to end)			
Centre			
Spare ribs - side			
- back			
Cutlets			
Other			
Institutional Cuts			
Tenderloin			
Backs			
Fresh Hams (boned, rolled & tied)			
Partly Preserved			
POULTRY			
Chicken (frozen or ice pak)			
Smoked & Canned			
Raw Processed			
Fryers			
Broilers			
Raw Boneless			
Fowl & Chicken			
Parts			
Cut-up Chicken			
Legs			
Wings			
Breasts			

Meat	Size or Specification or Grade	Monthly Quantity Sold	Unit Price
Portion Controlled Cuts and			
Convenience Foods			
Partly Preserved			
Cooked Diced Chicken			
Chicken Pie			
Turkey			
Smoked & Canned			
Raw Processed			
Turkey Roast (size)			
Raw Boneless			
Portion Controlled Cuts and			
Convenience Foods			
Turkey Parts			
Cooked Turkey Roast			
White (breasts)			
Dark (legs)			
Partly Preserved			
Turkey Rolls			
Cooked Diced Turkey			

APPENDIX A2

QUESTIONNAIRE ON MEAT PURCHASING PATTERNS BY INSTITUTIONS

(Revised Form)

INSTITUTIONAL MEAT MARKET SURVEY
DEPARTMENT OF RURAL ECONOMY
UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA

1. General

a. Name of Institution: _____

Address of Institution: _____

Person Contacted and Position: _____

Type of Institution: _____

b. Average number of meals (containing meats served in a day _____

Population of students, residents, patients, etc. _____

c. Does your institution have conventionally operated kitchen for food services? Yes ____ No ____

d. Which of the following meals do you service your students, patients, etc.?

Breakfast _____ Lunch _____ Dinner _____ Snack _____

e. Which of the following meals do your staff eat at the institution?

Breakfast _____ Lunch _____ Dinner _____ Snack _____

f. Is your kitchen operation (a) done by your management? Yes___ No___

(b) contracted out to a food management company? Yes ___ No ___

g. Is your meal service catered by the food management company?

Yes ___ No ___

h. If your meal service is catered, why do you choose the system of food service. Please rank the following reasons given as 1, 2, 3, 4 according to the order of importance.

Catering makes it easier to broaden and change menu _____

No kitchen facilities _____ Reduces kitchen labour costs _____

Avoids wastes _____

Other (specify reason) _____

i. If you do not use catered food system why. Please indicate the suggested reasons by 1, 2, 3, according to the order of importance, e.g., 1 is first, 2 is second, etc.

Catering does not embrace special diet necessary for our institution _____ No taste for it _____

Uncertainty about sanitary conditions during preparation _____

Others (specify) _____

j. What percentage of your meats are obtained in:

Convenience food form (hot meals) _____%

Precooked frozen food for reconstitution _____%

As fresh meats to be cooked in your kitchen _____%

k. By how much (per cent) do you think use of convenience foods has cut your food costs _____%

2. Procurement

a. How often do you change your menu? Please mark "√".

Every 6 weeks _____

Every 4 weeks _____

Every 3 weeks _____

Every 2 weeks _____

Don't have menu _____

Other (specify) _____

For each type of meat what specifications do you buy? Please give the per cent (%) of each type of cut you buy for each type of meat.

S P E C I F I C A T I O N S

Type of Meat	Whole Birds (%)	Primal Cuts, Sides, Hinds, Legs, Etc. (%)	Portioned Cuts (%)	Frozen Pre-cooked and Convenience Cuts (%)
Beef				
Veal				
Lamb				
Pork				
Poultry				

Why do you buy the types of cuts you buy most? Please mark the reasons suggested below by 1, 2, 3, 4, 5, etc., in order of desirability, i.e., your 1st choice is 1, next choice is 2, etc.

(a) Lower cost of meat _____

(b) Reduces kitchen labour cost _____

(c) Less fat content (exact meat quantity desired) _____

(d) Packers or processors more efficient _____

(e) Makes buying easy _____

(f) Fresher product _____

(g) Lack of adequate storage capacity _____

(h) Makes serving easy _____

(i) Other _____, explain _____

BEEF

What quantity used per week _____ lbs.

Would you buy convenience items?

e.g. Fresh pre-cooked beef cuts? Yes ____ No ____

Frozen pre-cooked for microwave oven? Yes ____ No ____

What new by-products would you like to see developed?

_____

Are you able to obtain all beef cuts locally? Yes ____ No ____

Why? _____

Comments:

VEAL

What quantity used per week _____ lbs. If you use little or no veal give reasons under "comments" below.

Is veal readily available? Yes ____ No ____ Why? _____

_____

Would you buy more portion cuts?

Cutlets? Yes ____ No ____ Why? _____

Roast? Yes ____ No ____ Why? _____

Chops? Yes ____ No ____ Why? _____

Stew? Yes ____ No ____ Why? _____

What new veal products would you like to see developed? _____

_____

Comments:

LAMB

What quantity used per week _____ lbs. If you use little or no lamb give reasons under "comments" below.

Fresh Canadian _____ lbs. Imported _____ lbs.

Are these products satisfactory? Yes ____ No ____ Why? _____

_____

Would you use more of these if processed differently? Yes ____ No ____

Why? _____

_____

More portion cuts? Yes ____ No ____ Why? _____

_____

More prepared boneless cuts? Yes ____ No ____ Why? _____

_____

Do you find the selection adequate? Yes ____ No ____ Why? _____

_____

What new lamb products would you like to see? _____

_____

Can you get supplies when you need them from your regular suppliers?

Yes ____ No ____ Why? _____

_____

Do you have adequate preparation and cooking information? Yes ____ No ____

Why? _____

Comments:

PORK

What quantity used per week _____ lbs.

Type: Fresh _____ lbs. Bacon _____ lbs. Ham _____ lbs.

Sausage _____ lbs. Pork loins _____ lbs. Pork Cutlet _____ lbs.

Butts _____ lbs. Pork chops _____ lbs. Bacon loaf _____ lbs.

Are these products satisfactory? Yes ____ No ____

Why? _____

Would you use more pork if processed differently?

Less Fat Yes ____ No ____ Why? _____

Boneless Yes ____ No ____ Why? _____

More Portion Cuts? Yes ____ No ____ Why? _____

Do you find selection adequate? Yes ___ No ___ Why? _____

_____

What new products would you like to see? _____

_____

Comments:

POULTRY

What quantity used per week _____ lbs.

Type of poultry used (per cent fresh or frozen)

	Fresh	Frozen
Roasting?	____%	____%
Fowl?	____%	____%
Turkey?	____%	____%
Turkey Broilers?	____%	____%
Ducks?	____%	____%
Geese?	____%	____%
Others (Wild Game)?	____%	____%

Would you use more poultry if processed differently? Yes ____ No ____

Are the products you use readily available on short notice? Yes ____

No ____ Why? _____

_____

Comments:

3. Sources of Purchase

Which firms do you buy from? Please indicate the per cent of your meats bought from each supplier.

Firm's Name	Meat Types				
	Beef	Veal	Lamb	Pork	Poultry
1.	____%	____%	____%	____%	____%
2.	____%	____%	____%	____%	____%
3.	____%	____%	____%	____%	____%
4.	____%	____%	____%	____%	____%
5.	____%	____%	____%	____%	____%
6.	____%	____%	____%	____%	____%
7.	____%	____%	____%	____%	____%
8.	____%	____%	____%	____%	____%
9.	____%	____%	____%	____%	____%

You probably select and retain your meat suppliers on the basis of some factors. Which of the following factors apply to you. Please mark the reasons suggested below by 1, 2, 3, etc., according to the order of desirability, e.g., 1 is most important, 2 is next, etc.

(a) Dependable Service ____
(b) Lower Price ____
(c) Uniform Quantity ____
(d) Reliability ____
(e) Advertising Promotion ____
(f) Community Image or Goodwill ____
(g) Proximity ____
(h) Others ____ Explain _____

_____

You probably buy some meats more often than others for various reasons. Please indicate by ranking 1, 2, 3, 4, 5, according to the order of importance, the reasons for buying each type of meats suggested below, e.g., 1 is most important, 5 is least important.

Types of Meats	Factors for Buying Meats				
	Consistently Lower Price	Low Fat Content	Taste	Culture of People	Easily Obtainable
Beef	_____	_____	_____	_____	_____
Veal	_____	_____	_____	_____	_____
Lamb	_____	_____	_____	_____	_____
Pork	_____	_____	_____	_____	_____
Poultry	_____	_____	_____	_____	_____

4. Purchasing Pattern

a. If some upward or downward trends have been observed in the quantities of some meats purchased, indicate by "√" which trend and why.

Beef: Up ____ Down ____ Why? _____

Veal: Up ____ Down ____ Why? _____

Pork: Up ____ Down ____ Why? _____

Lamb: Up ____ Down ____ Why? _____

Poultry: Up ____ Down ____ Why? _____

b. Do you make your purchases by (a) negotiation, (b) tender bids, or (c) do you buy anytime on demand? _____

_____

c. Do you buy on contract with suppliers? Yes ____ No ____

If you buy on contract, how long is each contract?

Every 3 months _____, Every six months _____, Other: _____

d. How often are deliveries made?

Daily _____ Once a week _____ Twice a week _____

Once in two weeks _____ Once a month _____ Other _____

e. Below is a table showing quantities and prices per lb. of each type of meat cuts bought. Please kindly provide the quantities and prices of the various types of meats bought for a recent month.

Price and Quantities for the Month of _____.

Meat Types and Cuts	Quantity Bought (lbs.)	Price Per lb.
Beef:		
Veal:		
Pork:		
Lamb:		
Poultry:		

APPENDIX A2

QUESTIONNAIRE TO PACKERS, PROCESSORS, PURVEYORS,

DISTRIBUTORS, ETC., WHO SUPPLY MEATS

TO INSTITUTIONS

(Revised Form)

INSTITUTIONAL MEAT MARKET SURVEY
DEPARTMENT OF RURAL ECONOMY
UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA

1. Type of Firm:

Circle which apply: Packer, Processor, Distributor, Meat Purveyor, Other (specify)

Head Office: _____

Volume of Sales per Year (capacity) in lbs:

Beef:	_____	lbs.
Veal:	_____	lbs.
Pork:	_____	lbs.
Lamb:	_____	lbs.
Poultry:	_____	lbs.

2. Distribution Channel:

A. What percentage of your total meats produced go to the institutions?

Beef:	_____	%
Veal:	_____	%
Lamb:	_____	%
Poultry:	_____	%
Pork:	_____	%

B. Source of Supply, i.e., where you buy from: Please indicate what proportion (%) of your meats produced in a year originate from the following sources:

	Alberta (%)	Other Canadian Province (%)	United States (%)	Australia (%)	New Zealand (%)
Beef:					
Cattle or Sides, Hinds, Quarter cuts	____	____	____	____	____
Hamburger Patties	____	____	____	____	____
Other	____	____	____	____	____
Veal:	____	____	____	____	____
Pork:	____	____	____	____	____
Lamb:	____	____	____	____	____
Poultry:	____	____	____	____	____

C. For the type of meats you import kindly rank the following reasons suggested as 1, 2, 3, 4, according to the order of importance, e.g., 1 is the most important reason, 4 is the least important.

	Imports Cost Less Than Alberta's	Short Supply in Alberta	Better Taste and Quality Than Alberta's	Company's Head Office Buying Policy
Beef:	____	____	____	____
Veal:	____	____	____	____
Pork:	____	____	____	____
Lamb:	____	____	____	____
Poultry:	____	____	____	____

3. Pricing and Competition:

A. Do you issue price lists to institutions: Yes ____ No ____

Is it weekly ____? Every two weeks ____? Monthly ____?

B. You probably utilize some guidelines to establish your selling price for different types of meats. The following are some suggested factors. Please rank them 1, 2, 3, according to the order of importance: e.g., 1 is most important, 3 is least.

Cost plus margin _____ Nature of market demand _____

Pricing to meet competition _____

C. You probably use some mechanisms to woo and retain your customers. Below are some strategies suggested. Please rank them 1, 2, 3, 4, 5, according to the order of importance: e.g., 1 is most important, 5 is least.

Offer of lower price _____

Volume (discount) selling at lower prices _____

Rebates to customers _____

Return Privileges _____

Free Products _____

D. Sales and advertising promotion methods. Below are some suggested sales promotion tactics used. Please list them according to the order of importance: 1, 2, 3, 4. e.g., 1 is most important, 4 is least.

Contact by phone _____

Salesmen visit _____

Issue of price list _____

Product development and differentiation _____

E. You probably use some tools to discourage price and non-price concessions sometimes asked by institution buyers. Below are some suggested tools you probably use. Please rank them according to the order of importance: 1, 2, 3, 4, e.g., 1 is most important, 4 is least important.

Buyer's smaller relative size _____

Special products processing _____

Established brand name _____

Catering to institutions _____

Contract to operate institutions kitchens _____

APPENDIX B1

NAME, TYPE, SIZE, POPULATION, AND LOCATION OF INSTITUTIONS, AND THE STATUS OF THE FOOD MANAGEMENT OFFICIALS IN THE INSTITUTIONS SURVEYED

Name of Institution	Location	Type of Institution	Status of Interviewee	Size of Institution[1]	Population of Institution's Residents
1. University of Alberta Hospital	Edmonton	Hospital	Dietician	2,500	1,048
2. Aberhart-W. W. Cross	Edmonton	Hospital	Dietician	862	282
3. Edmonton General	Edmonton	Hospital	Food Service Director	2,415	559
4. Misericordia General	Edmonton	Hospital	Food Production Supervisor	2,500	555
5. Charles Camsell	Edmonton	Hospital	Food Service Manager	1,200	404
6. Glenrose Provincial	Edmonton	Hospital	Food Service Manager	1,000	430
7. Alberta Hospital, Oliver	Edmonton	Hospital	Food Service Manager	1,700	650
8. Wetaskiwin General and Auxiliary	Wetaskiwin	Hospital and Auxiliary	Dietician	350	151
9. Stony Plain Municipal	Stony Plain	Hospital	Cook	60	30
10. Drayton Valley General	Drayton Valley	Hospital	Cook	100	47
11. Sturgeon General	St Albert	Hospital	Food Service Manager	230	100
12. Leduc General	Leduc	Hospital	Dietician	91	45
13. Allen Gray Auxiliary	Edmonton	Auxiliary Hospital	Administrator	120	52
14. Lynnwood Auxiliary	Edmonton	Auxiliary Hospital	Dietician	200	100

APPENDIX B1 (Continued)

Name of Institution	Location	Type of Institution	Status of Interviewee	Size of Institution[1]	Population of Institution's Residents
15. Norwood Auxiliary	Edmonton	Aux. Hospital	Chef	360	172
16. Good Samaritan Auxiliary	Edmonton	Aux. Hospital	Chef	580	200
17. St Joseph's Auxiliary	Edmonton	Aux. Hospital	Purchasing Director	400	190
18. Grandview Auxiliary	Edmonton	Aux. Hospital	Dietician	460	200
19. Wetaskiwin Nursing Home	Wetaskiwin	Nursing Home	Dietician	100	50
20. Jasper Place Central Park Lodge	Edmonton	Nursing Home	Cook	210	100
21. Rivercrest Lodge	Fort Saskatchewan	Nursing Home	Registered Nurse	140	70
22. Sherwood Park Home	Sherwood Park	Nursing Home	Registered Nurse	210	100
23. Youville Home	St Albert	Nursing Home	Chef	350	162
24. Good Samaritan (Mt Pleasant)	Edmonton	Nursing Home	Chef	467	196
25. Good Samaritan (Southgate)	Edmonton	Nursing Home	Food Service Manager	471	225
26. Parkland Nursing Home	Leduc	Nursing Home	Registered Nurse	100	50
27. Parkland Nursing Home	Edmonton (South)	Nursing Home	Chef	190	95
28. Hardisty Nursing Home	Edmonton	Nursing Home	Dietician	460	226
29. Group Home No. 1	Edmonton	Children's Home	Group Home Parent	20	10
30. Group Home No. 7	Edmonton	Children's Home	Supervisor	28	10
31. Group Home No. 13	Edmonton	Children's Home	Group Home Parent	22	10

APPENDIX B1 (Continued)

Name of Institution	Location	Type of Institution	Status of Interviewee	Size of Institution[1]	Population of Institution's Residents
32. Behavior Management	Edmonton	Children's Home	Foster Parent	25	10
33. Marydale Treatment Centre	Edmonton	Children's Home	Director	60	24
34. Zoie Gardner	Edmonton	Children's Home	Foster Parent	23	10
35. Rosecrest Home	Edmonton	Children's Home	Supervisor	100	58
36. Atonement Home	Edmonton	Children's Home	Supervisor	110	54
37. City of Edmonton Children's Centre	Edmonton	Children's Detention Centre	Cook	120	65
38. Hilltop House	Edmonton	Rehabilitation Women's Home	Director	42	21
39. Westfield Home	Edmonton	Child Care Institution	Clerk	200	86
40. Youth Development Centre	Edmonton	Juvenile Treatment Centre	Cook	400	115
41. Wetaskiwin Centre	Wetaskiwin	Children's Home	Clerk	120	40
42. University of Alberta--College St Jean	Edmonton	University	Food Service Administrator	2,800	4,500
43. Concordia College	Edmonton	College	Component Manager	300	440
44. N.A.I.T.[2]	Edmonton	Institute of Technology	Food Production Manager	1,200	8,000
45. Alberta College	Edmonton	College	Cafeteria Manager	70	
46. Alberta School for the Deaf	Edmonton	College	Food Service Supervisor	300	100

APPENDIX B1 (Continued)

Name of Institution	Location	Type of Institution	Status of Interviewee	Size of Institution[1]	Population of Institution's Residents
47. St Joseph's Composite High	Edmonton	High School	Food Service Director	600	3,000
48. Harry Ainly Composite High	Edmonton	High School	Chef	200	2,100
49. Louis St Laurent School	Edmonton	School	Business Manager	30	1,100
50. Victoria Composite High	Edmonton	High School	Chef	200	1,800
51. Bonnie Doon High School	Edmonton	High School	Cook	150	1,750
52. Centre d'Expérience	Edmonton	Préscolaire (Day Care)	Director	40	45
53. Oliver Day Care Centre	Edmonton	Day Care Centre	Director	45	40
54. Students' Union Day Care	Edmonton	Day Care Centre	Director	45	60
55. Grant MacEwan Day Care	Edmonton	Day Care Centre	Coordinator	50	40
56. South Edmonton Child Care	Edmonton	Day Care Centre	Director	70	60
57. Fort Saskatchewan Correctional Institute	Fort Saskatchewan	Jail	Cook	2,100	700
58. Belmont Rehabilitation Centre	Edmonton	Penal Rehabilitation	Cook	300	100
59. Canadian Forces Base	Namao	Military	Food Service Director	2,600	1,000

APPENDIX B1 (Continued)

Name of Institution	Location	Type of Institution	Status of Interviewee	Size of Institution[1]	Population of Institution's Residents
60. Transportation Building Cafeteria	Edmonton	In-office Cafeteria	Food Manager	120	500
61. Administration Building	Edmonton	In-office Cafeteria	Food Manager	200	1,200
62. Legislative Building	Edmonton	In-office Cafeteria	Food Manager	213	
63. C.N.I.B. Caterplan Services[3]	Edmonton	In-plant/In-office Cafeteria	Manager	500	

[1]Size of Institution is the average number of meal plates containing meats served per day per institution.

[2]N.A.I.T. represents Northern Alberta Institute of Technology.

[3]Figures provided for C.N.I.B. Caterplan Services represent an aggregate of 17 undeclared in-plant/in-office cafeterias served by the food management company in the study area.

APPENDIX B2

INSTITUTIONAL ESTABLISHMENTS WITH FOOD SERVICE, AVERAGE MONTHLY QUANTITY AND VALUE OF MEATS RECEIVED, 1977

Institutions	BEEF		VEAL		PORK		LAMB		POULTRY	
	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $
HOSPITALS AND NURSING HOMES										
1. Aberhart-W.W. Cross	3,612.12	3,572.00	320	880.62	4,915.8	7,277.24	-	-	1,800	2,549.07
2. Alberta Hospital, Oliver	6,419	7,381.85	200	550.2	2,851	3,563.75	40	92.00	2,932	2,492.20
3. Misericordia	1,000	640.00	-	-	150	180.00	5	14.5	800	680.00
4. Charles Campbell	2,690	4,631.70	-	-	1,250	1,807.58	-	-	1,724	1,693.50
5. Edmonton General	4,915	4,856.02	1,008	2,773.00	2,460	3,557.16	-	-	4,706	4,621.29
6. University of Alberta	3,517	3,474.80	-	-	1,315	1,946.20	350	630.00	2,530	2,150.50
7. Glenrose Provincial	2,680	2,195.20	-	-	350	383.00	100	136.00	1,000	814.00
8. Wetaskiwin General and Auxiliary	1,005	1,342.8	240	246.6	650	711.10	-	-	725	719.85
9. Wetaskiwin Nursing Home	147	246.53	46.6	71.75	155	241.62	-	-	224	195.82
10. Leduc General	310	339.3	30	56.2	150	219.1	-	-	260	226.0
11. Stony Plain Municipal	40	64.40	40	95.20	48.7	63.88	-	-	77	46.20
12. Drayton Valley General	200	218.90	-	-	150	220.0	-	-	70	42.0
13. Sturgeon General	704	751.29	-	-	91.69	108.8	-	-	493	401.1
14. Allen Gray Auxiliary	107	179.45	-	-	157	244.74	-	-	339	294.66
15. Jasper Place Central Park Lodge	320	536.68	-	-	160	261.40	-	-	240	208.60
16. Rivercrest Lodge	200	227.1	-	-	200	382.00	-	-	200	180.00
17. Lynnwood Auxiliary	400	454.20	-	-	280	534.8	-	-	672	604.8
18. Sherwood Park Nursing Home	368	288.24	-	-	-	-	196	268.52	360	413.60
19. Youville Home	1,271	1,012.07	-	-	424.2	387.03	-	-	639.9	521.5

APPENDIX B2 (Continued)

Institutions	BEEF		VEAL		PORK		LAMB		POULTRY	
	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $
HOSPITALS AND NURSING HOMES (Continued)										
20. Leduc Parkland Nursing Home	250	278.4	40	46.4	75.0	80.0	-	-	200	60.00
21. Norwood Auxiliary	1,000	1,400	-	-	680	1,020	-	-	450	360.00
22. Hardisty Nursing Home	1,300	1,256	-	-	675	713.57	-	-	940	874.2
23. Good Samaritan Nursing Home (Southgate)	1,140	1,090	180	169.2	772	817.08	-	-	860	799.80
24. Good Samaritan Nursing Home (Pleasantview)	1,233	1,378.33	88	110.88	800	1,197.6	50	95.00	501	423.11
25. St Joseph's Auxiliary	1,317	1,455.65	-	-	395	591.32	-	-	921.9	773.57
26. Good Samaritan Auxiliary	2,000	2,210.55	-	-	400	598.81	-	-	1,060	895.20
27. Parkland Nursing Home (South Edmonton)	400	460	-	-	170	178.5	-	-	400	440.0
28. Grandview Auxiliary	1,700	1,878.97	-	-	500	748.51	-	-	970	819.19
Total Hospitals and Nursing Homes	40,345.12	43,615.53	2,192.6	5,000.25	20,225.39	28,032.79	594.0	1,034.63	25,824.8	24,304.76
DEFENCE CENTRES										
29. Canadian Force Base Total	10,700	13,910	1,300	1,822	5,900	7,965	200	280	3,500	3,850

APPENDIX B2 (Continued)

Institutions	BEEF		VEAL		PORK		LAMB		POULTRY	
	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $
PENAL INSTITUTIONS										
30. Belmont Rehabilitation Centre	2,100	1,365	-	-	600	598	-	-	300	204
31. Fort Saskatchewan Correctional Institute	8,945	5,660	-	-	7,100	7,670	-	-	1,400	1,433
Total Penal Institutions	11,045	7,025	-	-	7,700	8,268	-	-	1,700	1,637
UNIVERSITIES AND COLLEGES										
32. University of Alberta and College St Jean	2,300	1,815.50	100	62.25	950	2,017	80	123.50	450	533
33. Northern Alberta Institute of Technology	12,000	20,384.92	3,500	2,843.70	8,800	10,134.10	7,000	6,836.27	4,770	4,405.1
34. Concordia College	300	672.80	-	-	300	508.68	25	33.25	200	256.16
35. Alberta College	180	198.00	-	-	90	108.00	-	-	50	52.50
36. Alberta School for Deaf	1,275	789.00	170	105.00	780	753.00	-	-	300	228.00
Total Universities and Colleges	16,055	23,860.22	3,770	3,010.95	10,920	13,520.78	7,105	6,993.02	5,770	5,474.76

APPENDIX B2 (Continued)

Institutions	BEEF		VEAL		PORK		LAMB		POULTRY	
	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $
SCHOOLS AND DAY-CARE CENTRES										
37. Harry Ainlay Composite High School	1,000	980.00	40	62.00	100	130.00	40	94.00	80	88.00
38. St Joseph's Composite High	1,000	900.00	40	65.00	400	440	-	-	400	408.00
39. Bonnie Doon High	600	588	-	-	352	528	-	-	120	206.40
40. Louis St Laurent School	40	54	-	-	-	-	-	-	60	96.00
41. Students' Union Day Care	40	22.8	-	-	15	23.00	-	-	20	19.4
42. Grant MacEwan Day Care	80	155.16	-	-	40	51.62	-	-	40	51.62
43. South Edmonton Day Care	160	91.52	-	-	40	44.00	-	-	40	30.8
44. Victoria Composite High	1,200	846.72	220	264.00	220	242.00	120	300.00	330	336.60
45. Oliver Day Care	60	43.08	-	-	52	65.52	-	-	60	59.4
46. Centre d'Expérience Préscolaire	35	25.13	-	-	18	25.74	-	-	20	19.60
Total Schools and Day Care Centres	4,215	3,706.41	300	391.00	1,237	1,153.88	160	394.00	1,170	1,315.82

APPENDIX B2 (Continued)

Institutions	BEEF		VEAL		PORK		LAMB		POULTRY	
	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $
IN-PLANT/IN-OFFICE CAFETERIAS										
47. C.N.I.B. Caterplan Services	1,550	2,175	-	-	685	922.05	-	-	120	206.8
48. Legislative Building	382	374.1	-	-	200.5	312.83	-	-	78.7	71.93
49. Administration Building	500	550.0	-	-	300	450.0	-	-	400	340.0
50. Transportation Building	500	550.0	-	-	400	600	-	-	300	260.0
Total In-Plant/In-Office Cafeterias	2,932	3,649.1	-	-	1,585.5	2,284.88	-	-	898.7	878.73
HOMES AND INSTITUTIONS										
51. Hilltop House	57	56.88	-	-	30	33.64	-	-	30	21.06
52. Westfield Home	390	379.50	-	-	240	370.2	-	-	150	133.50
53. Atonement Home	145	139.65	-	-	27	29.28	-	-	40	27.60
54. City of Edmonton Children's Centre	110	130.10	-	-	23.5	23.06	-	-	50	44.50
55. Wetaskiwin Centre	328.75	311.36	-	-	114.38	140.84	-	-	165.7	134.22
56. Group Home No. 1	125	131.20	-	-	9	8.79	-	-	5	4.25
57. Group Home No. 7	131.7	106.77	-	-	77.7	77.19	-	-	-	-
58. Group Home No. 13	100	113.75	10	18.9	60	65.80	10	23.0	40	29.20
59. Zoie Gardner	160	170.9	-	-	90	124.70	-	-	-	-
60. Marydale Treatment Centre	150	134.50	-	-	150	193.75	-	-	60	48.60

APPENDIX B2 (Continued)

Institutions	BEEF		VEAL		PORK		LAMB		POULTRY	
	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $	Quantity lb.	Value $
HOMES AND INSTITUTIONS (Continued)										
61. Behaviour Management Home	100	85.00	-	-	70	88.05	-	-	40	27.60
62. Rosecrest Home	90	113.50	80	108	-	-	-	-	60	58.20
63. Youth Development Centre	1,330	2,212.80	-	-	220	285.60	-	-	320	352.2
Total Homes and Institutions	3,217.45	4,085.91	90	126.9	1,111.50	1,440.90	10	23.0	960.7	746.71

Source: 1. Data from Institutions' food invoices supplied by the Institutions during survey.
2. Data on quantities and prices of meats provided by Institutions through the Questionnaires.

APPENDIX B3

AVERAGE MONTHLY QUANTITIES OF MEATS PURCHASED

TRANSFORMED INTO AVERAGE POUNDAGE OF MEATS

SERVED PER PLATE IN A MONTH

Institutions	Beef lbs.	Veal lbs.	Pork lbs.	Lamb lbs.	Poultry lbs.
HOSPITALS					
1. Aberhart-W. W. Cross	4.19	.37	5.70	.00	2.09
2. Alberta Hospital, Oliver	3.78	.11	1.68	.02	1.72
3. Misericordia	1.60	.00	.26	.06	1.28
4. Charles Campbell	2.24	.00	1.04	.00	1.43
5. Edmonton General	2.04	.42	1.02	.00	1.95
6. University of Alberta	1.41	.00	.53	.14	1.01
7. Glenrose Provincial	2.86	.00	.35	.10	1.00
8. Wetaskiwin General and Auxiliary	2.87	.68	1.85	.00	2.07
9. Wetaskiwin Nursing Home	1.47	.47	1.55	.00	2.24
10. Leduc General	3.41	.33	1.65	.00	2.86
11. Stony Plain Municipal	.67	.67	.82	.00	1.28
12. Drayton Valley General	2.00	.00	1.50	.00	.70
13. Sturgeon General	3.06	.00	.40	.00	2.14
14. Allen Gray Auxiliary	.89	.00	1.30	.00	2.83
15. Jasper Place Central Park Lodge	1.52	.00	.76	.00	1.14
16. Rivercrest Lodge	1.42	.00	1.42	.00	1.42
17. Lynwood Auxiliary	2.00	.00	1.40	.00	3.36
18. Sherwood Park Nursing Home	1.75	.00	.00	.93	1.71
19. Youville Home	3.63	.00	1.21	.00	1.83
20. Leduc Parkland Nursing Home	2.50	.40	.75	.00	2.00
21. Norwood Auxiliary	2.78	.00	1.89	.00	2.61
22. Hardisty Nursing Home	2.83	.00	1.47	.00	2.04

APPENDIX B3 (Continued)

Institutions	Beef lbs.	Veal lbs.	Pork lbs.	Lamb lbs.	Poultry lbs.
HOSPITALS (Continued)					
23. Good Samaritan Nursing Home (Southgate)	2.42	.38	1.64	.00	1.83
24. Good Samaritan Nursing Home (Pleasant View)	2.64	.188	1.71	.11	1.07
25. St. Joseph's Auxiliary	3.29	.00	.99	.00	.73
26. Good Samaritan Auxiliary	3.44	.00	.69	.00	1.83
27. Parkland Nursing Home (South Edmonton)	2.11	.00	.89	.00	2.11
28. Grandview Auxiliary	3.69	.00	1.09	.00	2.11
DEFENCE ACADEMY					
29. Canadian Force Base	4.12	.50	2.27	.08	1.35
PENAL INSTITUTIONS					
30. Belmont Rehabilitation Centre	7.00	.00	2.00	.00	1.00
31. Fort Saskatchewan Correctional Institute	4.26	.00	3.38	.00	.67
UNIVERSITIES AND COLLEGES					
32. University of Alberta and College St. Jean	.82	.04	.34	.03	.16
33. N.A.I.T.[1]	10.00	2.92	7.33	5.83	3.97
34. Concordia College	1.00	.00	1.00	.08	.66
35. Alberta College	2.57	.00	1.29	.00	.71
36. Alberta School for the Deaf	4.25	.57	2.60	.00	1.00
SCHOOLS AND DAY CARE CENTRES					
37. Harry Ainlay Composite High	5.00	.20	.50	.20	.40
38. St. Joseph's Composite High	1.67	.07	.67	.00	.67
39. Bonnie Doon High	4.00	.00	2.35	.00	.80
40. Louis St. Laurent School	1.33	.00	.00	.00	2.00
41. Students' Union Day Care	.89	.00	.33	.00	.44

APPENDIX B3 (Continued)

Institutions	Beef lbs.	Veal lbs.	Pork lbs.	Lamb lbs.	Poultry lbs.
SCHOOLS AND DAY CARE CENTRES (Continued)					
42. Grant MacEwan Day Care	1.60	.00	.80	.00	.80
43. South Edmonton Day Care	2.29	.00	.57	.00	.57
44. Victoria Composite High	6.00	1.10	1.10	.60	1.65
45. Oliver Day Care	1.33	.00	1.16	.00	1.33
46. Centre d'Expetience Prescolaire	.87	.00	.45	.00	.50
IN-PLANT/IN-OFFICE CAFETERIAS					
47. C.N.I.B. Caterplan Services	3.10	.00	1.37	.00	.24
48. Legislative Building	1.80	.00	.94	.00	.37
49. Administration Building	2.50	.00	1.50	.00	2.00
50. Transportation Building	4.17	.00	3.33	.00	2.50
WELFARE HOMES					
51. Hilltop House	1.38	.00	.71	.00	.71
52. Westfield Home	1.95	.00	1.20	.00	.75
53. Atonement Home	1.32	.00	.25	.00	.36
54. City of Edmonton Children's Centre	.92	.00	.20	.00	.42
55. Wetaskiwin Centre	2.74	.00	.95	.00	1.38
56. Group Home No. 1	6.25	.00	.45	.00	.25
57. Group Home No. 7	4.71	.00	2.79	.00	.00
58. Group Home No. 13	4.51	.45	2.71	.45	1.82
59. Zoei Gardner	6.96	.00	3.91	.00	.00
60. Marydale Treatment	2.50	.00	2.50	.00	1.00
61. Behaviour Management Home	4.00	.00	2.80	.00	1.60
62. Rosecrest Home	.90	.80	.00	.00	.60
63. Youth Development Centre	3.31	.00	.55	.00	.80

[1] N.A.I.T. means Northern Alberta Institute of Technology. The relatively higher quantity per plate received for the institution is due to the fact that meat is not only served as food in the institution but also used as production inputs in class instruction.

APPENDIX C

THE PRODUCTION CAPACITY, GEOGRAPHIC MARKET HORIZON, OWNERSHIP STATUS AND MEAT PRODUCTS MARKETED BY SOME SUPPLIERS OF MEATS TO INSTITUTIONS, 1977

Source: Alberta Agriculture, Agricultural Processing and Manufacturing Guide Index of Meat (Beef and Pork) Packers and Processors. 1977 Census District No. 11, Alberta.

1. Alberta Poultry Marketers Co-op Ltd. (F - 201 to 500 employees)
   Edmonton, Alberta.
   Ownership: Co-operative
   Products Provided: Fresh and fresh frozen poultry
   Brand Name: Lilydale, Country Fair
   Rated Capacity: 30 million pounds
   Sales Area: Alberta.

2. F. G. Bradley Co. Ltd. (D - 51 - 100 employees)
   Edmonton, Alberta.
   Ownership: Private Company
   Head Office: F. G. Bradley Co. Ltd,
   Toronto, Ontario.
   Product Produced: Meat purveying company
   Brand Name: f. g. bradley Gold Lable, Silver Label and Blue Label
   Rated Capacity: 8,000,000 pounds (approx.)
   Sales Area: All of Western Canada.

3. Burns Meats Ltd. (G - 500 plus employees)
   Edmonton, Alberta.
   Ownership: Private Company
   Product Produced: Cattle and hogs slaughter, fresh and processed
   Head Office: Burns Foods Ltd., Calgary, Alberta.
   Brand Name: Pride of Canada, Shamrock
   Sales Area: Canada primarily and world markets.

4. Centennial Packers Ltd,
   Edmonton, Alberta.
   Product Produced: Wholesale distributor
   Head Office: Calgary, Alberta.
   Sales Area: Alberta.

5. Canada Packers Ltd. (B - 16 to 25 employees)
Edmonton, Alberta.
Ownership: Public company
Product Produced: Fresh and fresh frozen poultry
Brand Name: Maple Leaf, York, Citadel
Rated Capacity: 8 million lbs.
Sales Area: Canada.

6. Canada Packers Ltd. (G - 500 plus employees)
Edmonton, Alberta.
Ownership: Public company
Product Produced: Meat--canned, cooked, cured, fresh and fresh frozen; edible oil products
Brand Name: Maple Leaf, Jubilee, Swan, Domestic, Kam, Klik, Perfection, Snowflake, SPS (Special Pastry Shortening), York, Private Label Brands
Rated Capacity: 130 million pounds
Sales Area: Alberta, British Columbia (except Vancouver), Saskatchewan, Eastern Canada, United States, Europe, Japan.

7. Capital Packers Ltd. (D - 51 to 100 employees)
Edmonton, Alberta.
Ownership: Private company
Product Produced: Beef, veal, pork cuts, fancy meats, smoked meats, sausages, meat loaves, poultry, and fish.
Brand Name: Capital Packers Ltd
Rated Capacity: 15,000,000 lbs.
Sales Area: Alberta.

8. Edmonton Custom Packers (A - 1 to 15 employees)
Edmonton, Alberta.
Ownership: Private company
Product Produced: Meat
Rated Capacity: N/R
Sales Area: Local (Edmonton and suburbs).

9. Edmonton Meat (C - 26 to 50 employees)
Edmonton, Alberta.
Ownership: Private company
Products Produced: Custom meat processing, HRI and North Camp suppliers, block ready beef, specialty meats.
Brand Name: Edmonton Meat
Rated Capacity: 10 million lbs./year
Sales Area: Alberta, Northwest Territories, British Columbia, Manitoba, Saskatchewan.

10. Gainer's Limited (G - 500 plus employees)
Edmonton, Alberta.
Ownership: Public company
Parent Company: Agra Industries, Saskatoon, Saskatchewan.
Product Produced: Full line of packing house products
Brand Name: Superior, Capital, Timely-Fair, Royal Breakfast, Eclipse
Sales Area: Alberta, export.

11. IMD Foods Ltd. (C - 26 to 50 employees)
Edmonton, Alberta.
Ownership: Public company
Head Office: Burns Foods Ltd., Calgary, Alberta.
Product Produced: Fabricated beef and pork cuts
Brand Name: Pride of Alberta
Rated Capacity: 5,000,000 lbs.
Sales Area: Canada--primarily Western; small amount of export trade (Japan, Denmark).

12. Lucerne Foods Ltd. (E - 101 to 200 employees)
Edmonton, Alberta.
Ownership: Private company
Parent Company: Canada Safeway Ltd., Winnipeg, Manitoba.
Products Produced: Dairy products, egg grading, beef breaking
Brand Name: Lucerne
Sales Area: Ontario to British Columbia.

13. Quellette Packers Ltd. (A - 1 to 15 employees)
Edmonton, Alberta.
Ownership: Private company
Products Produced: Freezer meat orders, custom slaughtering, cutting, wrapping, freezing
Rated Capacity: 750,000 lbs.
Sales Area: Local (Edmonton and surrounding towns).

14. Swift Canadian Co. Ltd. (G - 500 plus employees)
(Packing Plant), Edmonton, Alberta.
Ownership: Public company
Parent Company: Esmark Incorporated, Chicago, Illinois.
Products Produced: Meat slaughter and processing--beef, pork, lamb
Brand Name: Premium
Sales Area: Saskatchewan, Alberta, British Columbia, and export.

15. Swift Canadian Co. Ltd. (D - 51 - 100 employees)
(Turkey Processing), Edmonton, Alberta.
Ownership: Public company
Product Produced: Turkeys
Brand Name: Butter Ball, Golden West, Empire
Sales Area: Alberta and British Columbia.

16. Van's Sausage Co. Ltd. (C - 26 - 50 employees)
Edmonton, Alberta.
Ownership: Private company
Head Office: Edmonton, Alberta.
Product Produced: Fancy sausage, wieners, bologna, deli products, pizza, ravioli, meat pies, and sausage rolls.
Brand Name: Van's and Tony's
Rated Capacity: 4,000,000 lbs./year
Sales Area: Mainly Alberta, Saskatchewan, and British Columbia.

17. Wespac Meat Processing Co. Ltd. (D - 51 - 100 employees)
Edmonton, Alberta.
Ownership: Partnership
Product Produced: Hotel, restaurant, fast foods, and boneless products
Brand Name: Wespac
Rated Capacity: 15 million lbs.
Sales Area: Canada, United States

18 Home Freezer Meats (A - 1 to 15 employees)
Wetaskiwin, Alberta.
Ownership: Proprietorship
Product Produced: Meat products
Brand Name: Home Freezer Meats
Sales Area: Local.

19. Leduc Meat Packers Ltd. (A - 1 to 15 employees)
Leduc, Alberta.
Ownership: Private company
Product Produced: Custom killing
Rated Capacity: 500,000 lbs.
Sales Area: Local.

20. Parkland Packers (1976) Ltd. (A - 1 to 15 employees)
Stony Plain, Alberta.
Ownership: Partnership
Product Produced: Sausages
Rated Capacity: 500,000 lbs.

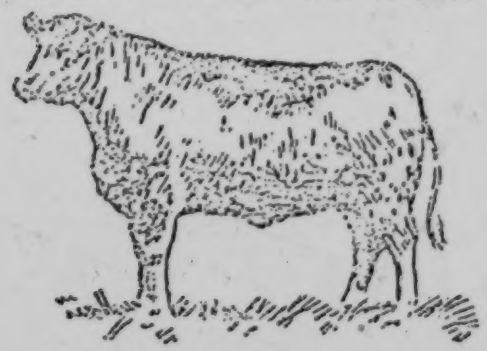
21. Sherwood Park Meat Packers (A - 1 to 15 employees)
Sherwood Park, Alberta.
Ownership: Private company
Product Produced: Custom slaughter and processing of beef and pork

22. West Country Packers (A - 1 to 15 employees)
Drayton Valley, Alberta.
Ownership: Private company
Product Produced: Slaughter animals
Sales Area: Local.

APPENDIX D1

PRICING OF RETAIL CUTS OF BEEF

FROM STEER TO BEEF



A good steer weighing 1,000 lb. alive and dressing 54% yields a 540 lb. carcass.

The remaining 460 lb. is composed of about 165 lb. hide, fats, other by-products and 295 lb. of valueless material.

The amount of carcass beef yielded by an animal is termed dressing percentage. Beef-type animals on the average dress 52 to 54% (chilled defleshed basis).

Dressing percentage is influenced by:
(a) amount of fill, (b) type of animal, (c) degree of finish, (d) cleanliness of hide and (e) sex of animal.

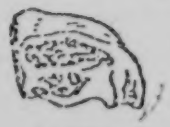
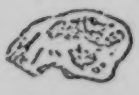
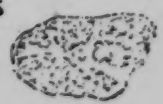
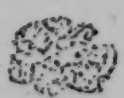
Dressing Percentage Affects Live Price

Dressed Beef Price per 100 lb.	Live Value per 100 lb. of cattle dressing:			
	48%	50%	52%	54%
$30.00	$14.40	$15.00	$15.60	$16.20
40.00	19.20	20.00	20.80	21.60
50.00	24.00	25.00	26.00	27.00

CARCASS SHOWING WHOLESALE CUTS

Hind Quarter
1—Round
2—Steak Piece or Sirloin Butt
3—Short Loin
4—Flank

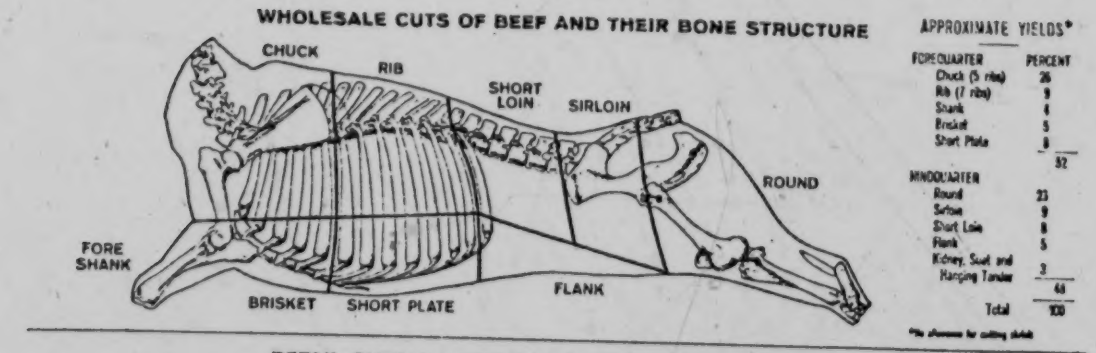
Fore Quarter
5—Rib
6—Chuck
7—Plate
8—Point Brisket
9—Shank

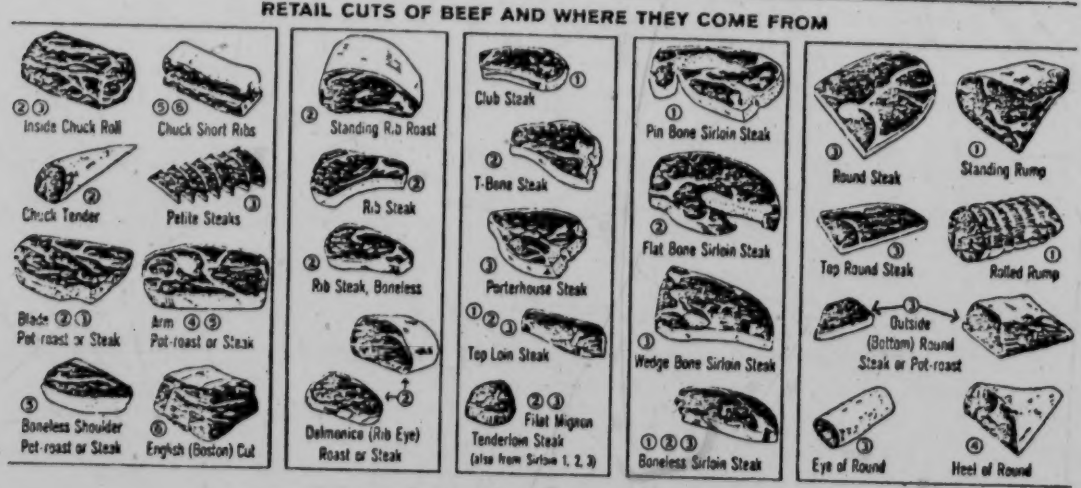
RETAIL CUTS		Yield Per Carcass (Approx.)	
HIGHER PRICE CUTS		lb.	%
Porterhouse		16	3
T-bone		11	2
Wing or Club		16	3
Sirloin		33	7
Sirloin tip		22	4
Rolled Rib		38	7
		141	26
MEDIUM PRICE CUTS			
Round		65	12
Rump		27	5
		92	17
LOWER PRICE CUTS			
Short (cross) rib		39	7
Blade (boneless)		38	7
Shoulder		19	3½
Hamburg and stew beef		109	20⅛
		208	37¼
TOTAL SALEABLE MEAT per 540 lb. carcass equals		437	80¾
Waste (bone, suet, shrink)		103	19¼

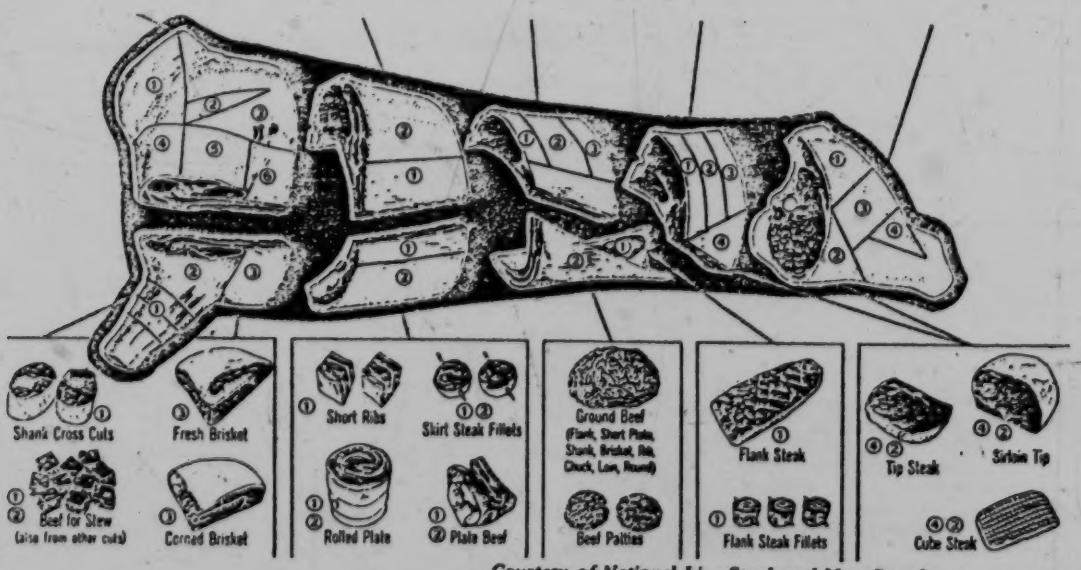
Source: Meat Packers Council of Canada.

APPENDIX D2

WHOLESALE CUTS OF BEEF AND THEIR BONE STRUCTURE





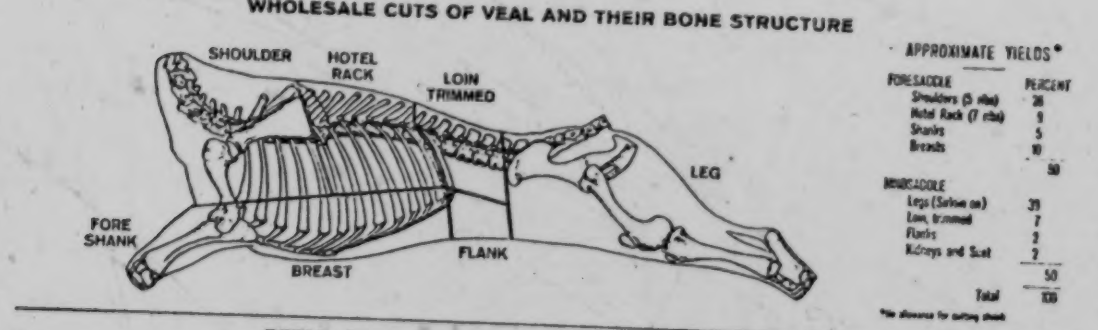


Courtesy of National Live Stock and Meat Board

WHOLESALE AND RETAIL CUTS OF BEEF

Source: J. H. McCoy, Livestock and Meat Marketing (Westport, Connecticut: The Avi Publishing Company, Inc., 1972), pp. 192-193.

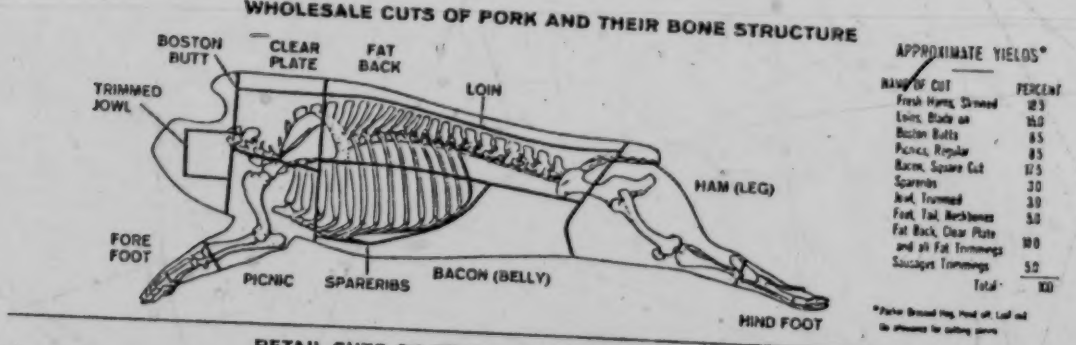
WHOLESALE CUTS OF VEAL AND THEIR BONE STRUCTURE

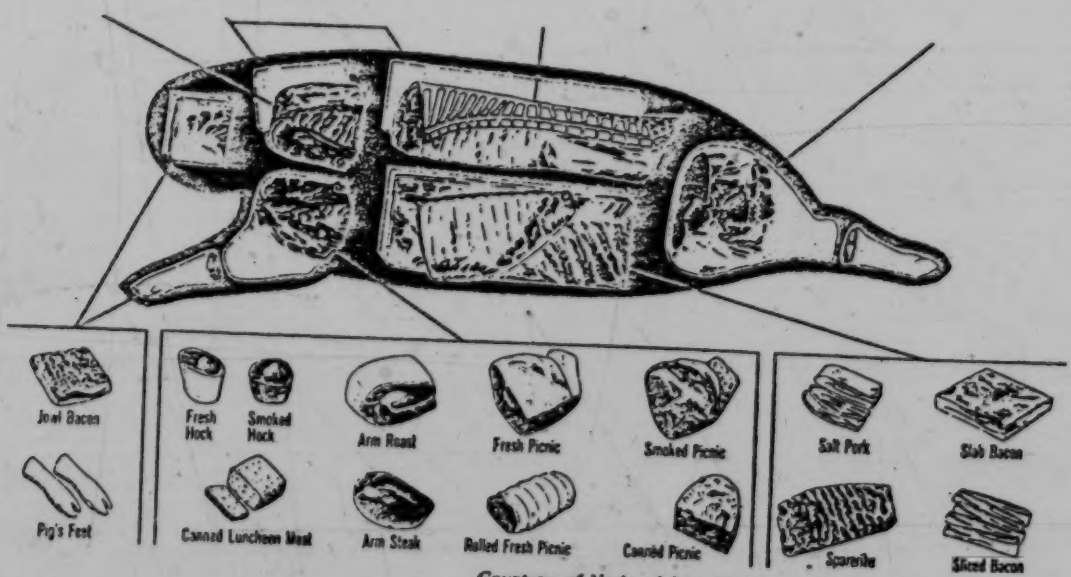


WHOLESALE AND RETAIL CUTS OF VEAL

Source: J. H. McCoy, Livestock and Meat Marketing (Westport, Connecticut: The Avi Publishing Company, Inc., 1972), pp. 194-195.

WHOLESALE CUTS OF PORK AND THEIR BONE STRUCTURE





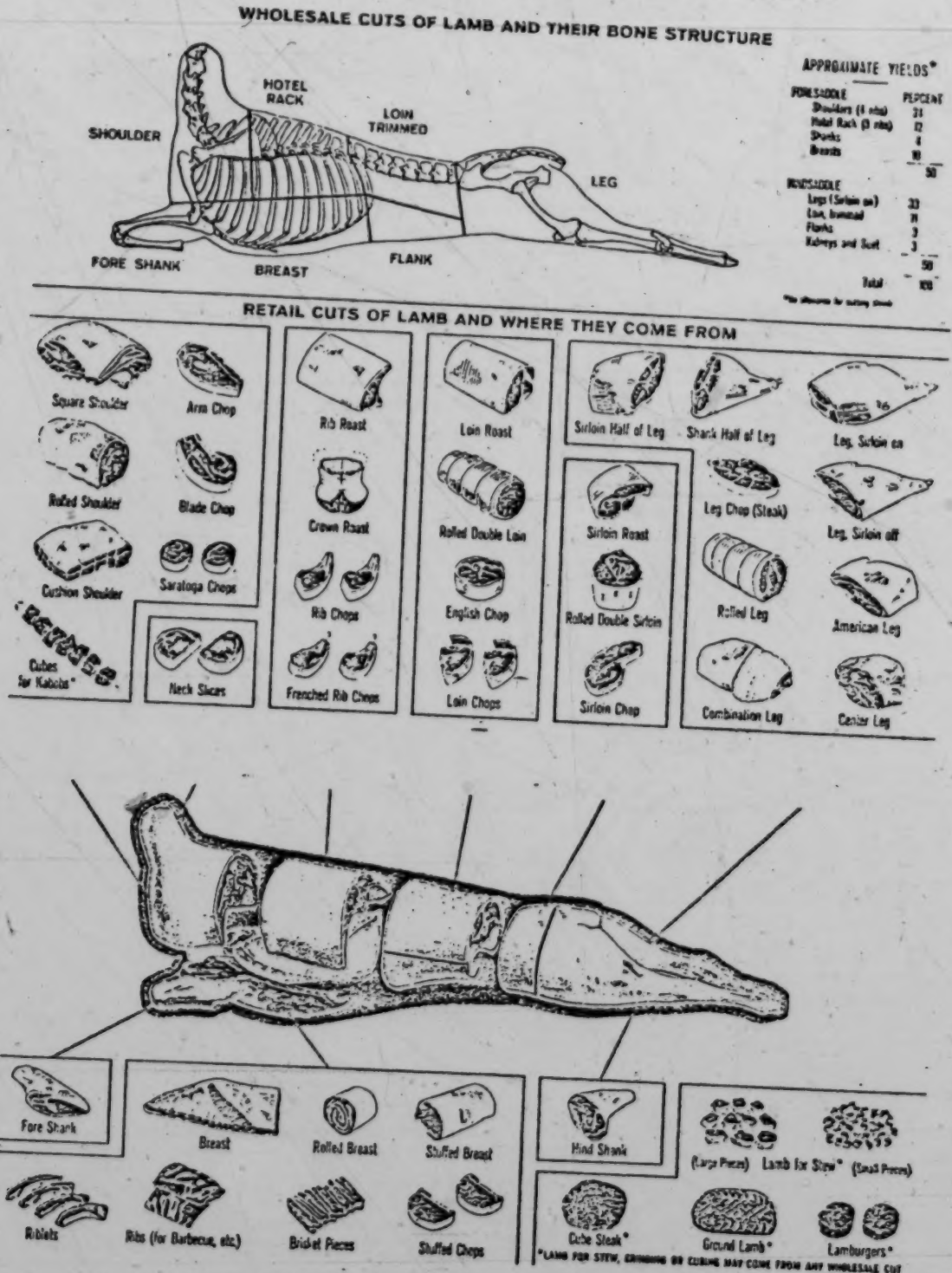
Courtesy of National Live Stock and Meat Board

WHOLESALE AND RETAIL CUTS OF PORK

Source: J. H. McCoy, Livestock and Meat Marketing (Westport, Connecticut: The Avi Publishing Company, Inc., 1972), pp. 196-197.

APPENDIX D5

WHOLESALE CUTS OF LAMB AND THEIR BONE STRUCTURE



WHOLESALE AND RETAIL CUTS OF LAMB

Source: J. H. McCoy, Livestock and Meat Marketing (Westport, Connecticut: The Avi Publishing Company, Inc., 1972), pp. 198-199.

APPENDIX E1

A HYPOTHETICAL TABLE OF MEAT PURCHASING METHODS

USED BY INSTITUTIONS

Size[1] of Institution	Purchasing by Negotiation	Purchasing by Competitive Bids	Spot Buying	Negotiation and Tender Bids
	Number of Institutions Reporting			
0 - 199	4	3	20	1
200 - 399	3	4	4	1
400 - 799	8	4	0	0
800 and over	3	7	0	1
Total	18	18	24	3

[1] Size is the average number of meat meals served per day per institution.

The null hypothesis postulated is that there is no relationship between the size of an institution and the procurement method used for meat purchases.

APPENDIX E2

A HYPOTHETICAL TABLE OF FIRMS' RANKING OF GUIDELINES FOR ESTABLISHING PRICES

Guidelines for Price Setting	Ranks: 1	2	3	Weighted Average of Ranks	Grand Ranking All Institutions
	Firms Reporting				
Cost plus margin	2	1	2	1.66	1
Supply of meats demanded	2	1	2	1.66	1
Pricing to meet competition	1	3	1	1.83	2

The null hypothesis tested is that there is no clearly interpretable pattern of rankings of the factors used as guidelines for setting prices.

APPENDIX E3

HYPOTHETICAL FREQUENCY DISTRIBUTION OF THE EXTENT TO WHICH FIRMS BELIEVED THESE SALES PROMOTIONAL STRATEGIES WERE USED

Sales Promotional Strategies	Ranks				Weighted Average of Ranks	Grand Ranking All Institutions
	1	2	3	4 or no rank		
	Institutions Reporting					
Offer of lower price	2	1	1	1	2.2	1
Volume (discount) selling	1	2	0	2	2.6	2
Rebate to customers	0	0	0	5	4.0	4
Return privileges	1	0	1	3	3.2	3

The hypothesis tested is that the firms do not believe that there is any clearly interpretable pattern of rankings of the factors used in promoting sales.

APPENDIX E4

HYPOTHETICAL FREQUENCY DISTRIBUTION OF THE EXTENT TO WHICH FIRMS BELIEVED NEGOTIATIVE STRATEGIES WERE EMPLOYED IN NEGOTIATION

Negotiative Strategies	Ranks: 1	2	3	4 or no rank	Weighted Average of Ranks	Grand Ranking All Institutions
	Firms Reporting					
Firm's relative size vs. buyer's	0	0	0	5	4	4
Special product processing	3	2	0	0	1.4	1
Established brand name	2	2	1	0	1.8	2
Quality and service	1	1	1	2	3	3

The null hypothesis tested is that the firms do not believe that there is any clearly interpretable pattern of rankings of the factors used in negotiation.

APPENDIX E5

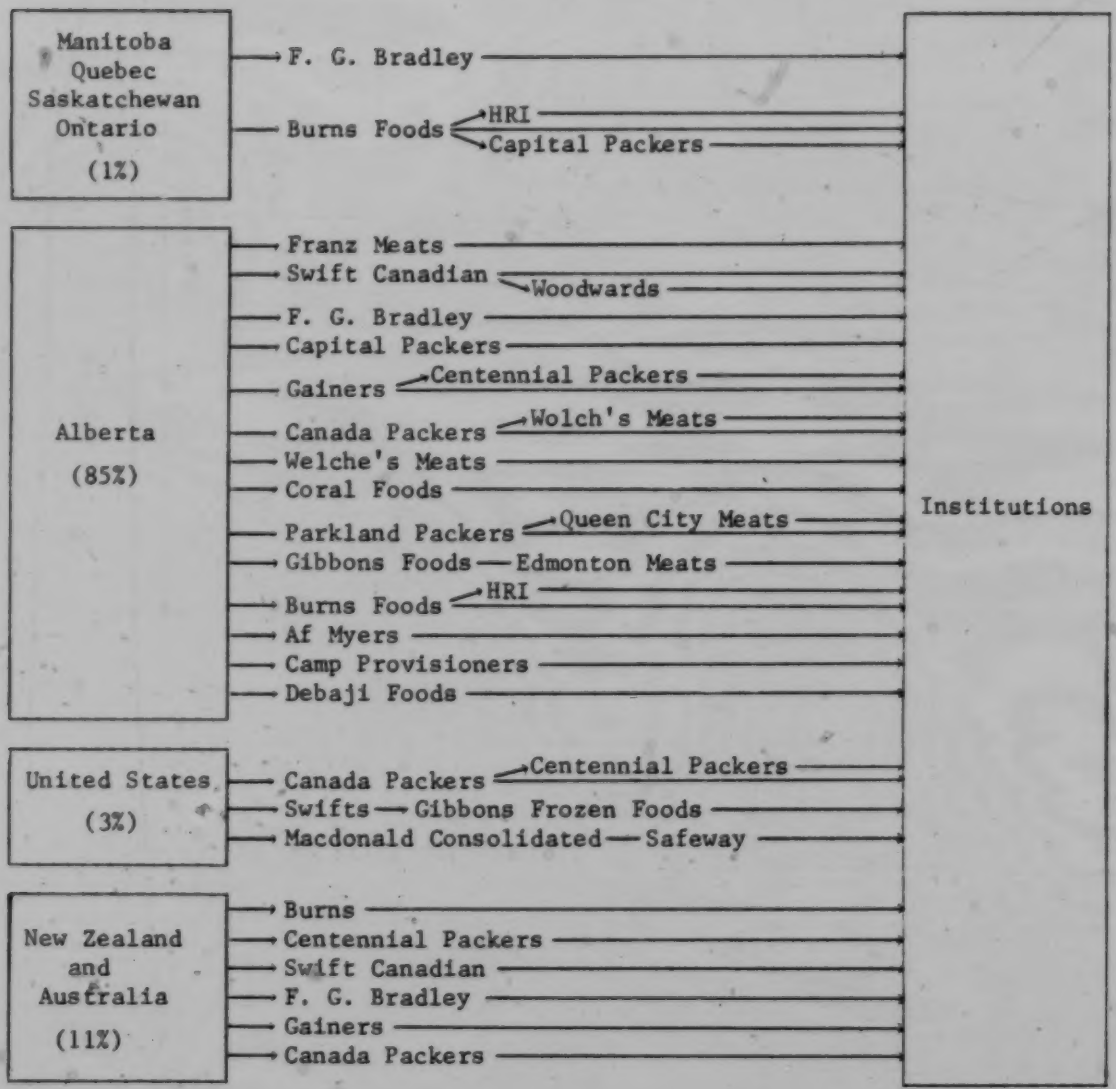
HYPOTHETICAL FREQUENCY DISTRIBUTION OF THE RANKINGS OF FACTORS CONSIDERED BY INSTITUTIONS IN SECURING ADVANTAGES IN NEGOTIATION WITH SUPPLIERS AND CONSIDERED IN SELECTING AND RETAINING SUPPLIERS

Factors for Selecting and Retaining Meat Suppliers	Ranks								
	1	2	3	4	5	6	7 or no rank	Weighted Average of Ranks	Grand Ranking All Institutions
	Institutions Reporting								
Dependable service	19	18	20	4	1	1	0	2.25	1
Lowest price	20	10	9	12	7	0	5	2.93	3
Uniform quality	14	18	17	11	1	0	2	2.60	2
Reliability	4	13	12	24	7	1	2	3.44	4

The null hypothesis tested is that there is no clearly interpretable pattern of rankings of the negotiative strategies used by buyers.

APPENDIX E6

AN HYPOTHETICAL DISTRIBUTION CHANNEL FOR MEATS



MEAT FLOWING INTO INSTITUTIONS
BEEF PERCENTAGE DISTRIBUTION BY ORIGINAL SOURCE

Alberta:	85%	United States:	3%
New Zealand:	3%	Other Canadian Provinces:	1%
Australia:	8%		

APPENDIX E7

HYPOTHETICAL TABLE ON INSTITUTIONAL ESTABLISHMENTS WITH FOOD SERVICE,

AVERAGE MONTHLY QUANTITY OF MEAT RECEIVED BY TYPE OF INSTITUTIONS SURVEYED, 1977

Type of Institution	Meat Products					Total by Institutional Type	Percent of Total Meat Used
	Beef	Veal	Pork	Lamb	Poultry		
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
Hospitals and Nursing Homes	38,899.12	2,162.6	19,145.4	594	23,040.8	83,841.92	44.8
Universities and Colleges	16,055	3,770	10,920	7,025	5,770	43,540.00	23.2
Schools and Day-Care Centres	4,215	300	1,237	160	1,170	7,082.00	3.8
Welfare Homes and Institutions	3,217.45	90	1,111.50	10	960.7	5,389.65	2.9
Penal Institutions	11,045	-	7,700	-	1,700	20,445.00	10.9
Defence Centres	10,700	1,300	5,900	200	3,500	21,600.00	11.5
In-plant/In-office Cafeterias	2,932	-	1,585.5	-	898.7	5,416.2	2.9
Total by Meat Type	87,063.57	7,622.6	47,599.4	7,989	37,040.2	187,314.77	100.0

The hypothesis tested is that the quantity of meat bought by each institution does not depend on the type of institution or the type of meat.

APPENDIX E8

HYPOTHETICAL FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF FACTORS FOR BUYING MOST FREQUENTLY BOUGHT MEAT CUTS[1]

Factors for Buying Most Frequently Bought Meat Cuts	Ranks[2]						Weighted[3] Average of Ranks $\Gamma\omega$	Grand Ranking All Institutions
	1	2	3	4	5	6 or no rank		
	Institutions Reporting							
Lower cost of meat	18	4	7	4	4	20	3.56	3
Reduces kitchen labour cost	13	11	6	8	3	16	3.44	2
Less fat content	15	14	4	6	6	12	3.33	1
Packers more efficient at cutting	2	6	12	11	3	23	4.33	5
Makes buying easy	5	8	11	8	10	15	3.96	4
Provides fresher product	2	6	5	6	9	29	4.77	7
Lack of adequate storage capacity	0	6	5	9	7	30	4.88	8
Makes serving easy	5	2	10	4	7	29	4.63	6
For instructional purposes	3	1	0	0	0	53	5.67	9
Government buying policy	0	0	0	1	0	56	5.96	11
Less shrinkage	0	1	1	1	0	54	5.84	10

[1] Based on responses of 57 institutions that buy most of their meats fresh.

[2] The ranks and grand ranking by all institutions are in descending order of magnitude, i.e., the lowest number represents the highest rank, the highest number, the lowest rank.

[3] Weighted average of the ranks is computed as $\Gamma\omega = \frac{\Sigma rx}{\Sigma x}$, where r = ranks, and x = institutions reporting.

APPENDIX E9

HYPOTHETICAL RESPONSE FREQUENCIES OF INSTITUTIONS' RANKING OF FACTORS FOR USING CATERED FOOD SYSTEM[1]

Factors for Catering	Ranks[2]					Weighted Average of Ranks $\bar{r}_w$	Grand Ranking All Institutions
	1	2	3	4	5 or no rank		
	Institutions Reporting						
No kitchen facilities	2[3]	0	0	0	4	3.67	5
Catering is adaptable to menu changes	1	0	2	2	1	3.33	3
Catering reduces kitchen labour costs	1	3	0	2	0	2.5	1
Catering avoids wastes	1	1	3	0	1	2.83	2
No local kitchen management expertise	0	1	1	4	0	3.5	4
More consistent and quality food service	0	1	0	0	5	4.5	7
For convenience	1	0	0	0	5	4.3	6

[1] Based on responses of 6 institutions using catering food service.

[2] The ranks and grand ranking by all institutions are in descending order of magnitude; i.e., the lowest number represents the highest rank, the highest number, the lowest rank.

[3] One of the two institutions represents an aggregate of 17 employee cafeterias catered by a food management company. Thus, in essence, 18 institutions did actually rank "No kitchen facilities" as the No. 1 factor for using a catered food system. The grand rank of 5 given to the factor thus did not accurately show the effect of "No kitchen facilities" for the use of catered foods in these institutions.

APPENDIX E10

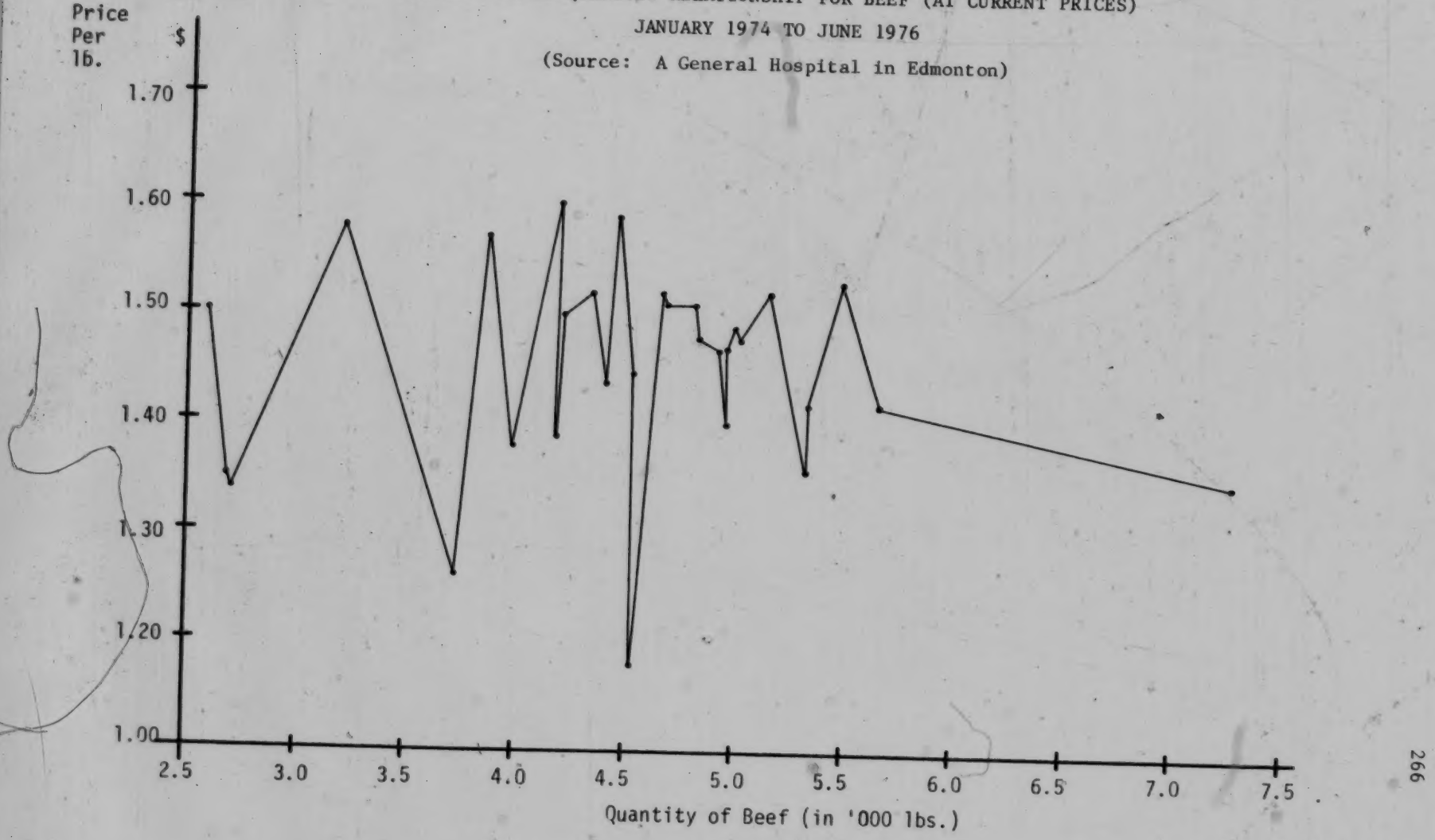
HYPOTHETICAL TABLE OF FREQUENCY DISTRIBUTION OF INSTITUTIONS' RANKING OF REASONS FOR NOT USING CONVENIENCE FOODS[1]

Factors for Not Catering	Ranks				Weighted Average of Ranks $\Gamma\omega$	Grand Ranking all Institutions
	1	2	3	4 or no rank		
	Institutions Reporting					
Not suitable for our diet and program	12	10	9	26	2.86	3
No taste for it	27	21	9	0	1.68	1
Uncertainty about sanitary conditions	4	18	21	14	2.78	2
Uncertainty about quality of meat served	2	12	8	35	3.33	4
Cheaper to operate kitchen	5	3	7	40	3.37	5
More convenient to operate kitchen	8	6	2	41	3.33	4
Cooking used as a learning experience	7	0	1	49	3.61	7
Catered food quality unsatisfactory	4	4	3	46	3.60	6
We've never tried catered food	0	0	0	57	4.00	9
Government policy	2	0	0	55	3.89	8

[1] Based on responses of 57 institutions not using catered foods.

APPENDIX F1

MONTHLY PRICE-QUANTITY RELATIONSHIP FOR BEEF (AT CURRENT PRICES)
JANUARY 1974 TO JUNE 1976
(Source: A General Hospital in Edmonton)

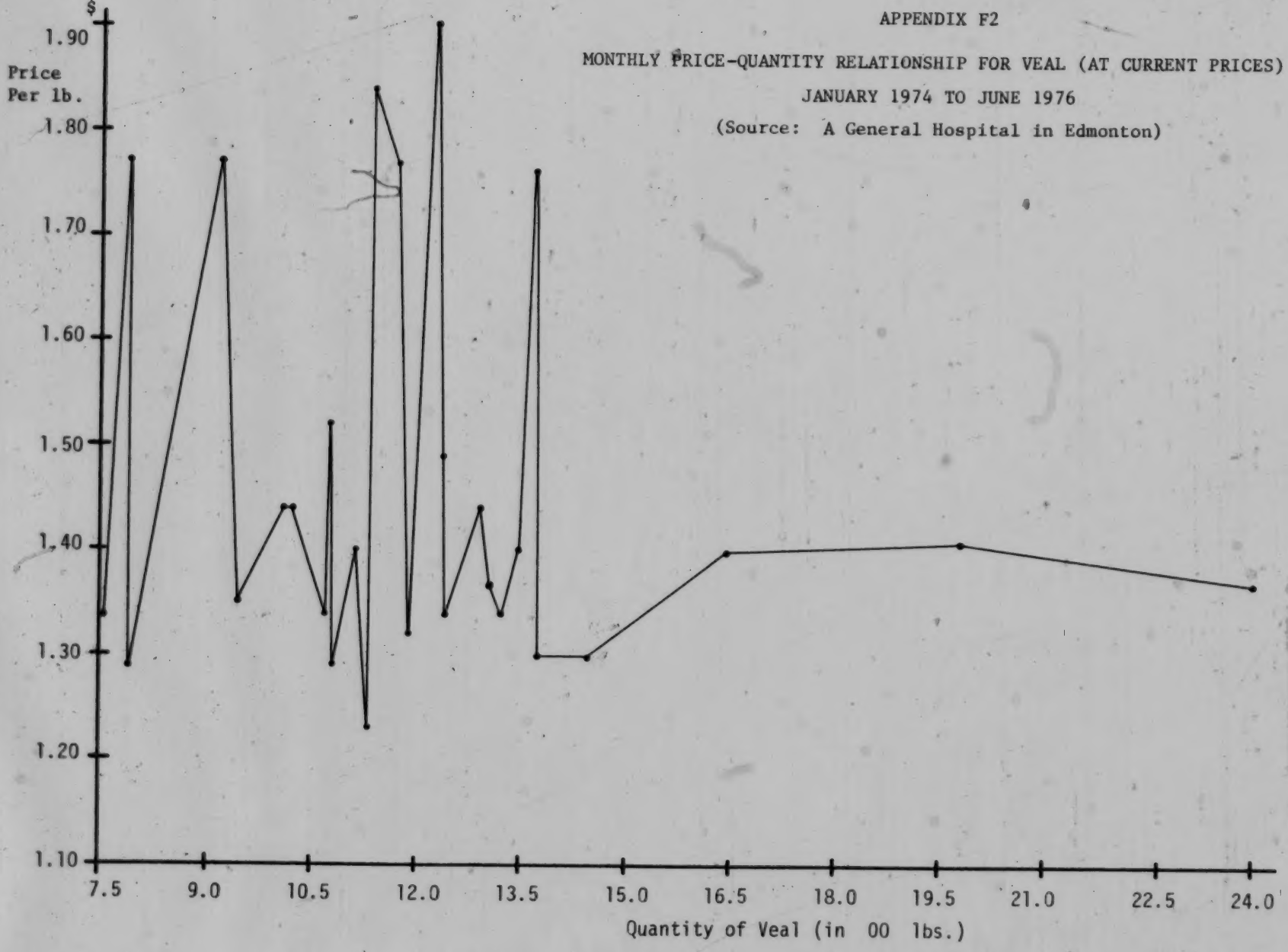


APPENDIX F2

MONTHLY PRICE-QUANTITY RELATIONSHIP FOR VEAL (AT CURRENT PRICES)

JANUARY 1974 TO JUNE 1976

(Source: A General Hospital in Edmonton)

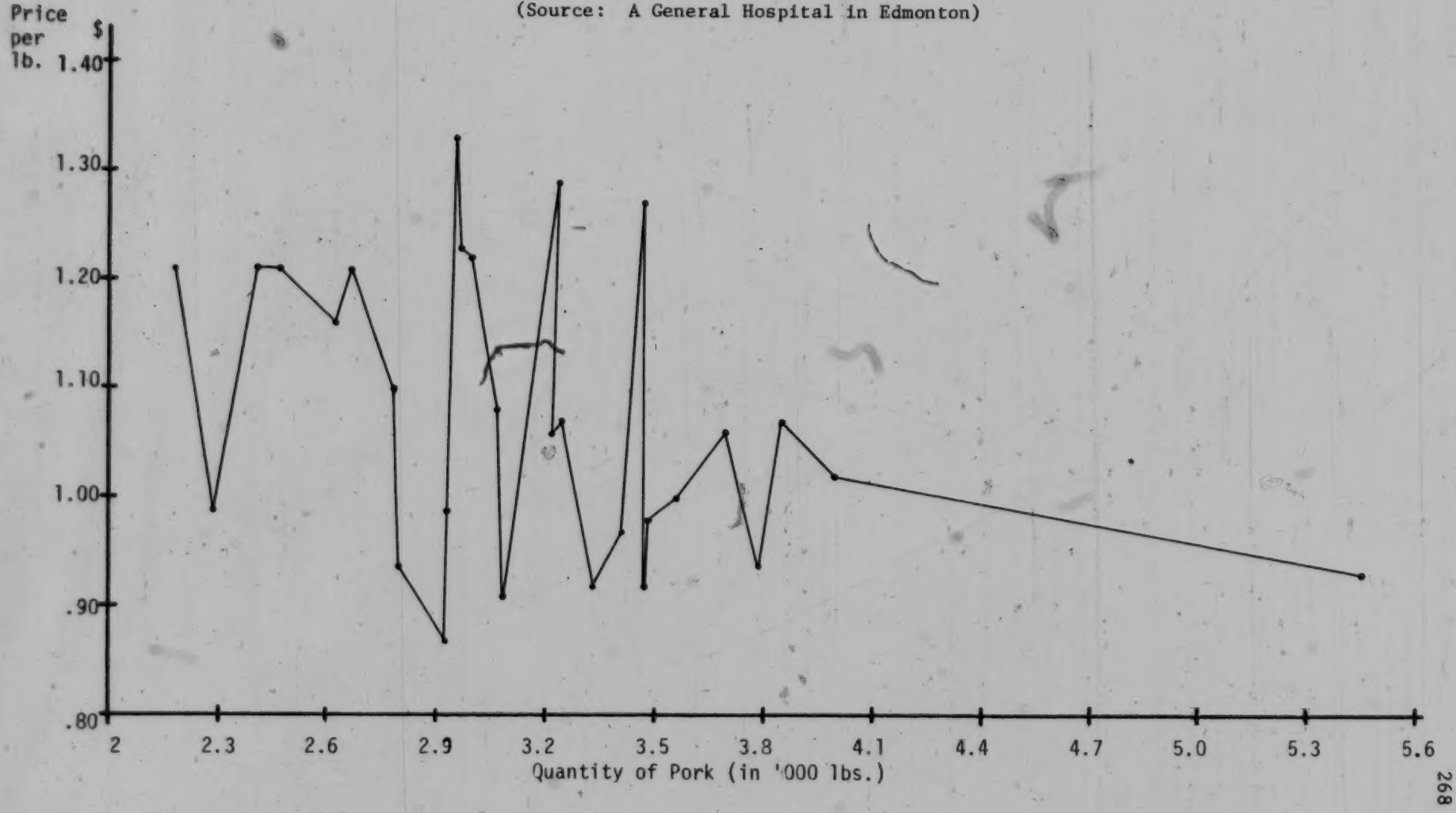


APPENDIX F3

MONTHLY PRICE-QUANTITY RELATIONSHIP FOR PORK (AT CURRENT PRICES)

JANUARY 1974 TO JUNE 1976

(Source: A General Hospital in Edmonton)

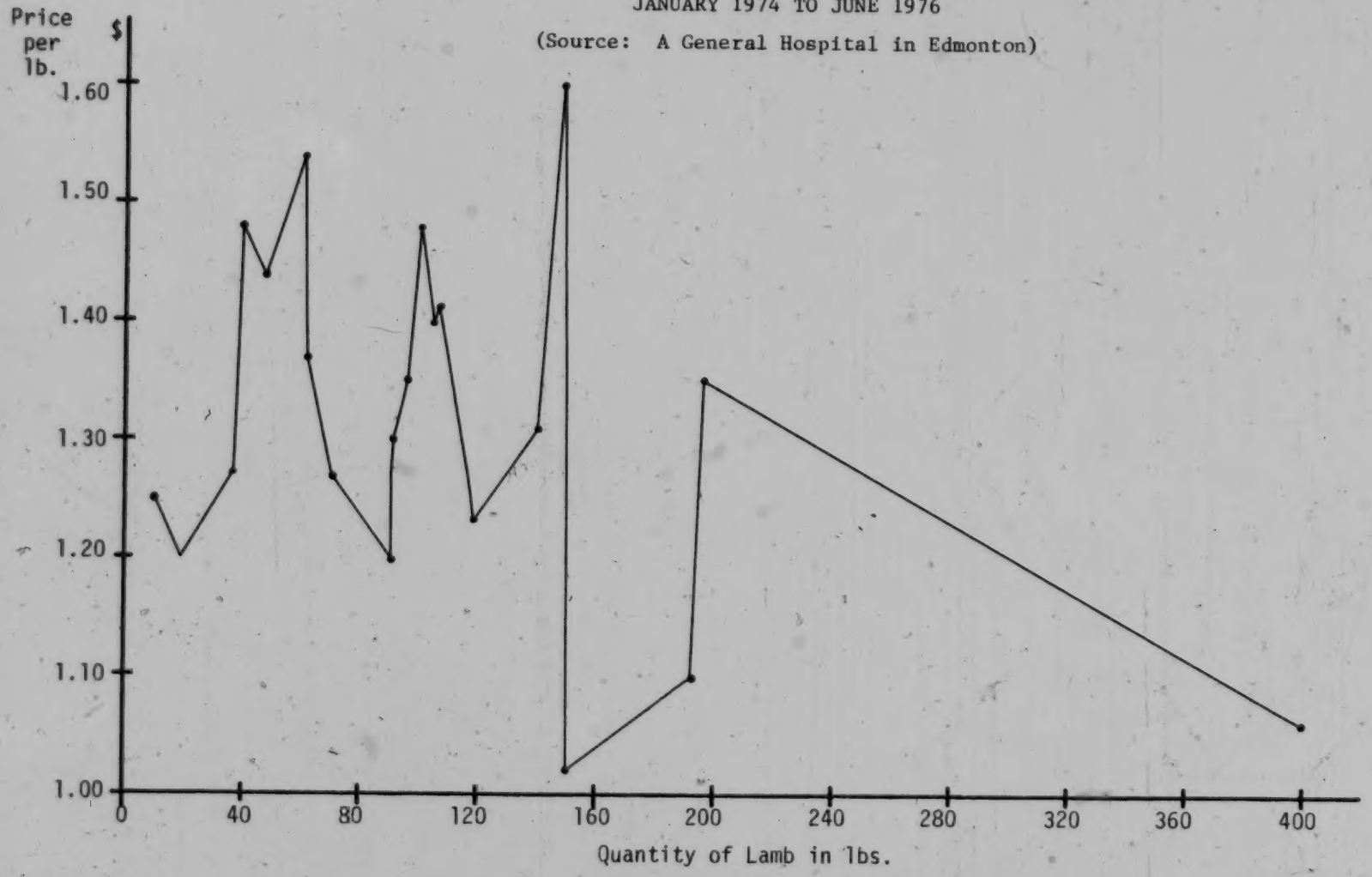


APPENDIX F4

MONTHLY PRICE-QUANTITY RELATIONSHIP FOR LAMB (AT CURRENT PRICES)

JANUARY 1974 TO JUNE 1976

(Source: A General Hospital in Edmonton)

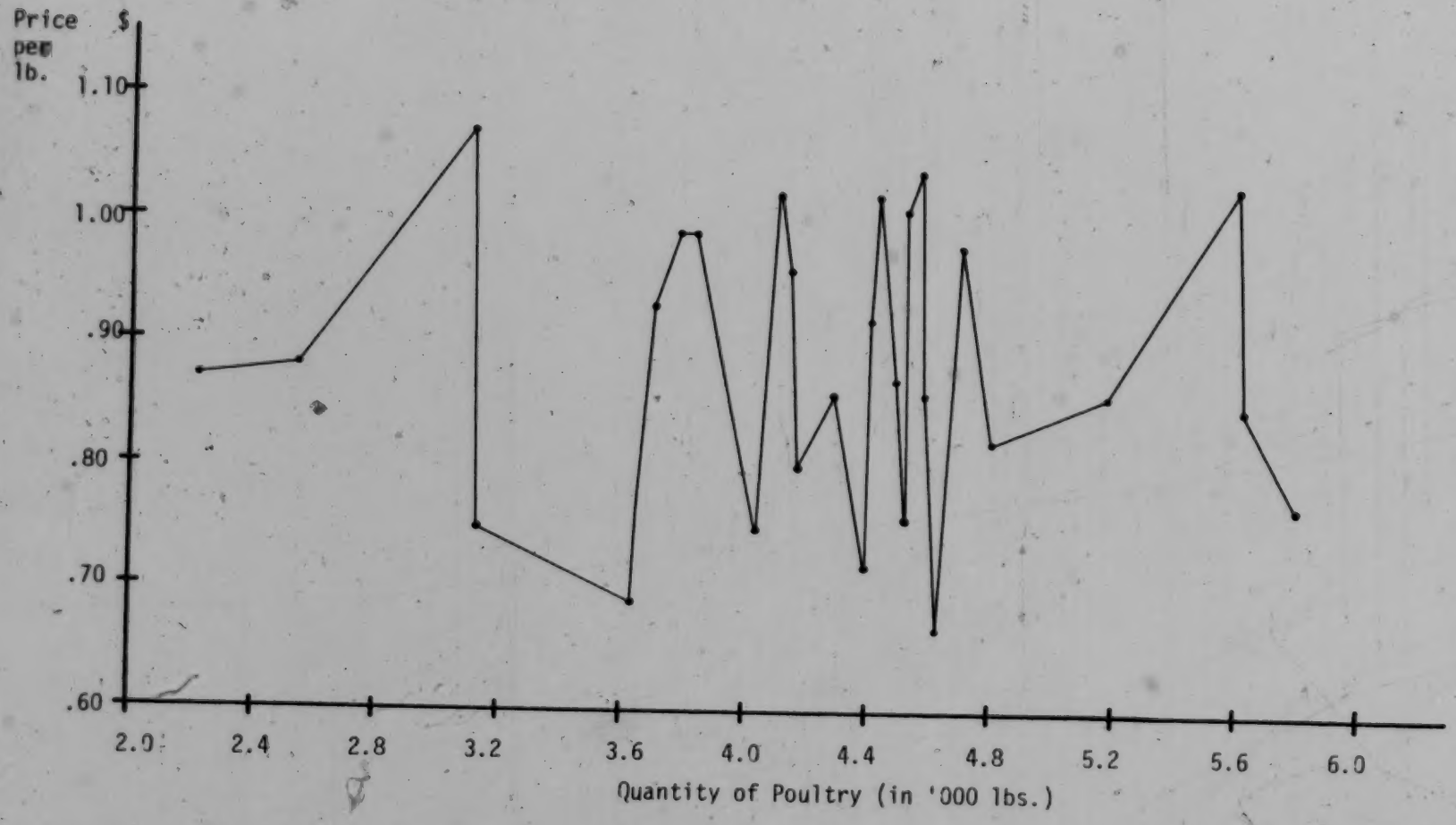


APPENDIX F5

MONTHLY PRICE-QUANTITY RELATIONSHIP FOR POULTRY (AT CURRENT PRICES)

JANUARY 1974 TO JUNE 1976

(Source: A General Hospital in Edmonton)



APPENDIX F6

MONTHLY QUANTITIES AND PRICES OF THE TYPES OF MEAT BOUGHT BY A HOSPITAL

Months of Year	Beef		Veal		Pork		Lamb		Poultry	
	lbs.	Price Per lb. $	lbs.	Price Per lb. $	lbs.	Price Per lb. $	lbs.	Price Per lb. $	lbs.	Price Per lb. $
Jan. 1974	4,188	1.50	787	1.77	2,287	0.99	40	1.48	3,075	0.75
Feb.	4,537	1.08	1,369	1.76	3,411	0.97	38	1.30	3,641	0.77
Mar.	4,978	1.39	1,164	1.77	3,778	0.94	90	1.20	5,800	0.77
Apr.	4,205	1.40	752	1.34	2,793	0.94	150	1.02	4,030	0.75
May	4,362	1.42	1,134	1.84	3,021	0.87	399	1.06	4,620	0.67
June	5,131	1.43	1,072	1.52	5,485	0.93	91	1.30	4,390	0.72
July	2,697	1.24	917	1.77	3,482	0.98	96	1.35	3,093	1.07
Aug.	4,171	1.29	1,222	1.90	3,565	1.00	100	1.48	4,174	0.80
Sept.	3,192	1.48	1,093	1.40	3,081	1.08	48	1.44	4,809	0.82
Oct.	4,408	1.49	1,373	1.30	3,850	1.07	148	1.60	4,069	0.84
Nov.	4,820	1.41	1,341	1.40	3,244	1.07	89	1.27	3,615	0.69
Dec.	4,713	1.41	1,102	1.28	3,698	1.06	193	1.10	5,630	0.85
Jan. 1975	5,146	1.42	946	1.35	3,023	0.99	-	-	2,222	0.87
Feb.	5,027	1.38	1,973	1.41	3,162	0.91	104	1.40	4,569	0.76
Mar.	4,951	1.30	1,643	1.40	3,219	1.06	38	1.31	4,584	0.86

APPENDIX F6 (Continued)

Months of Year	Beef		Veal		Pork		Lamb		Poultry	
	lbs.	Price Per lb. $	lbs.	Price Per lb. $	lbs.	Price Per lb. $	lbs.	Price Per lb. $	lbs.	Price Per lb. $
April 1975	5,333	1.32	1,134	1.35	3,334	0.97	118	1.23	4,293	0.86
May	5,319	1.26	2,400	1.37	3,471	0.92	70	1.27	5,188	0.86
June	5,659	1.32	1,310	1.37	3,913	1.02	19	1.20	4,479	0.87
July	7,264	1.25	791	1.29	2,783	1.10	-	-	2,578	0.88
Aug.	3,732	1.16	1,191	1.32	2,618	1.16	-	-	4,405	0.92
Sept.	2,667	1.25	1,322	1.34	3,221	1.29	-	-	3,693	0.93
Oct.	3,972	1.28	1,134	1.23	2,950	1.33	61	1.37	3,834	0.99
Nov.	4,412	1.34	1,082	1.29	2,953	1.33	-	-	3,788	0.99
Dec.	7,853	1.42	1,237	1.49	3,465	1.27	36	1.27	5,598	1.03
Jan. 1976	4,818	1.38	1,069	1.34	3,051	1.23	116	1.27	4,519	1.01
Feb.	4,651	1.42	1,304	1.44	2,404	1.21	60	1.54	4,556	1.04
Mar.	4,951	1.37	1,240	1.34	3,070	1.22	106	1.41	4,449	1.02
Apr.	4,518	1.35	1,441	1.30	2,667	1.21	141	1.31	4,146	0.96
May	3,860	1.47	1,015	1.44	2,158	1.21	197	1.35	4,092	1.02
June	4,915	1.37	1,008	1.44	2,460	1.21	10	1.25	4,706	0.98

Source: A major general hospital, Edmonton, Alberta.